



INTERSTATE  
COMMERCE COMMISSION  
LIBRARY.  
DEC 16 1898











# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, FEBRUARY 11, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.  
CINCINNATI, - - - - - MONDAY, FEB. 11.

#### OUR SUPPLEMENT.

We commence to-day the publication of a weekly issue devoted to the great question of a Pacific Railroad. It may be asked, and not without cause, why we thus intrude ourselves in this unusual manner before the country. We answer, for our country's welfare. The time has now arrived when it is imperative on the Government to provide some means for more intimately uniting with us our brethren on the Pacific; that those of our friends who leave us to-day for their home at the setting sun, may not be constrained to traverse both oceans, expose themselves to the malignant atmosphere of a Panama channel, and spend a month of valuable time before they reach their destination. That the Government will provide us some better means of conducting our commercial affairs between the states of the Atlantic, the great center, and the far off Pacific. That the Government shall take such prudential measures of safety and defence for our country, as shall deter our enemies, and make us feel secure in our homes. The powerful states of Europe, with their myriads of steamers traversing every sea, can now pounce on our defenceless western coast, and burn and pillage to their hearts' content before we could send a single regiment to their relief. They can intercept our treasures as they pass from sea to sea, and destroy our commerce. But let Congress do its duty—give us a railroad to the Pacific, on our own soil, and in as little time as it would take to land an offensive army, another of superior numbers, of more daring courage, and equally skilled in arms, could be there to repel the intruders from our homes.

It will also develop the resources and inexhaustible mineral wealth of our now (practically) worthless territory. We hesitate not a moment in hazarding the opinion that more mineral wealth will be developed in grading any of the proposed routes than will be amply sufficient to build two such roads.

Again, it is not asked of Congress to furnish money, or any of the available means of the Government. All that is asked, is a sufficient appropriation of that which is now worthless, and unavailable, but would be rendered valuable and productive under the au-

spices of private enterprise and private capital. Indeed, it would not be very difficult to prove that the government would not be giving away anything, by a liberal grant for railroad purposes, where the road is to be constructed through its trackless waste, but that it would actually make a great speculation.—Neither do we ask that Congress shall do any thing for any sectional project, but make grants to develop, equally, the North, the South, and the Center.

This is not all. The country demands it. Congress is but the servant of the people and is expected to meet their wishes. The public domain is entrusted to their keeping for the public use, and public good; not merely as a source of revenue to an overflowing treasury, but as a means of advancing the interests of the nation, of elevating the masses, and strengthening our commercial, social, fraternal and political relations.

#### THE TEXAS PACIFIC RAILROAD AND ITS ADVANTAGES.

Since the thorough examination of the Texas route to the Pacific, both by the Government Surveyors and by Col. Gray, new facts have come to light, and that line has unquestionably the vantage ground. The reasons upon which it is now preferred, and which rest on incontrovertible facts, are these:

1. Taking the centre of the population of the United States, which is in the Upper Ohio Valley, as a point of departure, and the Texas route is the *nearest* to a port on the Pacific ocean; and, therefore, the *best and most convenient to the greatest number* of the population of the United States. This fact is incontrovertible, if the Government surveys are correct. Thus, taking Cincinnati, the center of the Ohio valley, as a point of departure, and we have this result:

|  |            |
|--|------------|
| Cincinnati to Chicago.....   | 260 miles. |
| Chicago to Council Bluffs.....   | 449 "      |
| Council Bluffs to Benicia <i>via</i> South West Pass, <i>vide</i> the Government "Explorations." | 2,032 "    |
| Aggregate Distance on the latitude of 41°  | 2,741 "    |
| Cincinnati to Cairo.....   | 350 "      |
| Cairo to Fulton.....   | 370 "      |
| Fulton to San Diego <i>via</i> El Paso (Government "Explorations.").....                         | 1,559 "    |
| Aggregate on the 32°.....  | 2,270 "    |

Difference in favor of the Texas route 471 miles. The route of the South West Pass is the most favorable one, north of the 32° latitude; so that we need compare with no other. This great difference in favor of the Texas route holds true of Cairo and Springfield, Illinois; of Evansville, Madison and Indian-

apolis, Indiana; of Columbus and Cleveland, Ohio; and of all the States south of the Ohio river: so that, to the northwest, as well as the southwest, the Texas route is the shortest and the most truly national. It is equally true, that it is the best, which will appear from subsequent facts.

2. It is not only the shortest line from the Central West; but it presents the *shortest possible* route, from the *navigable* waters of the Mississippi, to the navigable waters of the Pacific ocean. We have the testimony of Maj. S. P. Heintzelman, who was three years a resident at Fort Yuma on the Colorado—that steamboats of 4 feet draught navigated the Colorado in the year 1852 and 1853 *at the lowest stage of water*. When the Texas road, then, shall reach the Colorado, it is on the *navigable waters of the Pacific*. But, this point is 260 miles east of San Diego. Deducting this from the whole distance, and we have only *thirteen hundred miles* of railroad to connect the navigable waters of the Mississippi with those of the Pacific. But, from Council Bluffs to Benicia, the nearest distance on the 41°, is 2,032 miles. In other words, between the Mississippi and the Pacific there is an *actual gain on the Texas route of seven hundred miles!* This is one-third the whole distance. This alone should determine the whole question. It is decisive.

3. The Harbor of San Diego is a good harbor, and ample for all purposes, so that there is not only no need of going to San Francisco to find a harbor, but for a large part of the commerce of the Pacific, San Diego will be a better point. The description of that harbor, given by those acquainted with it, is that the entrance is about one-fourth of a mile broad, and the length of the harbor about four miles. The United States Men-of-war and the Mail ships of the Pacific Company, have both moored easily, and safely, at the wharves of San Diego. The harbor is completely locked in, and ample enough for any purpose. There is, therefore, no need of making a railroad directly to San Francisco; any more than to the mouth of the Columbia, Puget's Sound, or any other point. The idea that San Francisco has the *exclusive* right to a Pacific railroad, is one which should be repudiated at once. It may be commercially convenient and proper to have a branch road there; and if it is, California should furnish a large part of the means.

4. There is another consideration of immense importance in building a road to the Pacific. It is the cost of *running it*; and



here we must consider climatic influences. It is not yet certain that a railroad *can* be run through the Rocky Mountains in the winter season. Let us examine for a moment the circumstances under which it must be run. The influence of climate on railroads has not yet been fully ascertained, for no very systematic observations have been made on the effect of cold and snow on the running of railroads; but, in the experience of the *New York & Erie*, and the *Pennsylvania*, we have elements of an estimate. In the first place, let us see what kind of obstruction of this kind may be met with on the slope of the Rocky Mountains? Those who read the Reports of the Government officers, and the arguments of those who favor a Pacific Railroad through the Northern Pass, will observe that great efforts are made to show that in the *western* slopes of the Rocky Mountains, in Oregon and Washington territories, the depth of snow is small, and no great obstruction need be apprehended from that source. But, in fact, the danger from cold and snow lies on the *eastern*, on the great plains, through which run the Missouri and the Platte. On this head we have two facts of significant import.

Lieut. Tinkham, in his letter to Governor Stevens, (*vide* "Explorations," page 400) says: "The passage of the Bitter Root range was made between November 21st and Dec. 18th. Excepting occasional small valleys, the whole of the mountain district was covered with snow, having, as I judge, a greatest depth of six feet, and an average depth of two feet for the whole depth of the mountains." This, it will be observed, was in the early part of the winter, before the period of greatest cold.

To this fact we add another, which has occurred the present winter. The U. S. Mail parties, from Independence to the Great Salt Lake, have been driven back by the impossibility of proceeding. They found the snow four feet deep, hard and level, on the great plain of the Platte. It is, therefore, palpable that a railroad constructed on the plains of the Platte and Missouri must encounter a far greater amount of snow and cold than has been encountered by any road yet constructed in the United States. The effect of this obstruction can only be conjectured. But we have one fact which will enable us to estimate at least some part of the effect in running a railroad. An attentive examination of the Reports of the Erie Railroad will show that the average expenses of the three winter months are, in proportion to the business done, 10 per cent. greater than those of the three summer months. But the obstructions on the Erie road are slight, compared with those of a road running on the eastern slope of the Rocky Mountains. If we place 15 per cent. of the whole expenses as the increased cost of *running* such a road

over one in Texas, we shall be within the mark. If, then, the expenses of running the road (1,800 miles in length) be \$5,000 per mile, the advantage possessed by the Texas route in *running* expenses will be equal to \$1,350,000 per annum, or 6½ per cent. interest on *twenty millions of dollars*. This will be *one-third* the cost of a railroad to San Diego.

5. The last, but a very potent argument for the Texas route, is the grant of lands made by Texas. This is 10,400 acres per mile under the previous charters, of which that of the Texas Western Company is one. We need not say here more than that the value of Texas lands has rapidly appreciated, and that this grant on 780 miles is equal to 10,000,000 of acres, which, with the advantage conferred by the railroad, would be cheaply estimated at a cash value of *twenty millions*.

The considerations we have briefly stated, are those which seem to give superior weight and importance to the Texas route; but while this fact is undeniable, we shall not hesitate to give all the information we possess on the other routes, and interest our readers in the greatest enterprise of the day.

#### NAVIGATION OF THE COLORADO.

We learn from a private letter, under date of Dec. 13th that a new steamer has just been put on this river to accommodate its increasing trade. This is the third steamer put on this river since 1850. These boats were built at San Francisco and sent down to the mouth of the Colorado, and there put up.—The last one is a stern wheeler, the others were side-wheel craft.

The letter says: "The new boat is finished and running. She is called the 'Colorado' and arrived here (Fort Yuma), on the 8th Dec., her first trip. She is one of the prettiest models I ever saw in my life, and is really an A No. 1 boat. She runs like a streak of lightning. She is of 100 tons burthen and 80 horse power, and everything about her complete and of the best material. The only objection to her is she is too sharp and therefore requires more water to run on than we have at some seasons of the year.—They say that her draft is light, but her being so sharp, interferes with her running in shallow water. However she made her trial trip in five days, with 50 tons of freight in the lowest water and worst river we have had since I have been here. She came from tide water to near Ogden's Landing, from sun to sun, in these short days."

The development of a region is one of the certain consequences that must follow its coming into the possession of people of energy and enterprise. It is but a few years since the region of the Colorado, and all California was known only to a few traders and

travelers. It was spoken of as one of desert sands and bleak and rugged mountains. To-day, it is considered as one of the finest regions in the world, both in point of agricultural and mineral wealth. Its arid sands, by a change in the policy of the agriculturist have become fruitful fields, and instead of a grain *importing*, California is to-day a grain *exporting* country. And so it will be with other portions of the now "barren and howling wilderness." As enterprise develops its mineral resources, its agricultural value will be tested and it is altogether probable that it will be found a self-supporting region. Its valleys are already known to be rich and its plains will probably be found productive.

## GREAT NORTHERN R. R. ROUTE TO THE PACIFIC.

LOWER CASCADES, COLUMBIA RIVER,  
WASHINGTON TERRITORY, Nov. 23d, 1853.

E. Gest, Esq., President of the Platte River Valley and South Pass Railroad Company—

SIR:—Nearly two years since, I did myself the honor of publishing in the *Railroad Record*, of Cincinnati, Ohio, a communication to your address, in which I took occasion to set forth some of the advantages of the mouth of the Columbia River, meriting the attention of your Company, as the Pacific terminus of the Continental Railroad. Since that time, my unavoidable detention in the mountainous regions of our country, prevented me from learning what was transpiring at home, or designed for execution abroad. As to the PROGRESS of the great work that is to distinguish this age and people as an epoch ever memorable in the annals of civic arts and the development of human genius, I know comparatively nothing, for that length of time, last past. Hoping, however, that the *idea* has been steadily fastening itself on the public mind, and twining its tendrils around the common interests of the American people, uniting them in a more tangible net work; which, like the spider's web, will extend from ocean to ocean—embracing in their association every interest, every class of people and every hope of national greatness; therefore, I beg, most respectfully to offer such other suggestions as may be of interest to your Company, or importance to a truthful development of the topographical features of the country.

The great valley of the Mississippi, that inexhaustible store house of vegetable production—the seat of modern empire—the garden of the continent, and Eden of the world, whose chequered surface marks great navigable water courses and interminable lines of railroad, furnishes the geographical center of the continent, and points to a central line of interoceanic communication. *The railroad*



interests of the Atlantic Seaboard States are concentrating on this line. The Canadian railroads are also combining, approaching, and no doubt looking forward to a junction with this central line. The eastern terminus of the great Central Continental Railroad, is already designated by your Company, in the very centre of the inland commerce, and its course is directed towards the Pacific ocean.

Commencing on the Missouri river, and following up the beautiful valley of the Platte, it passes through a prairie country abounding in game and the most luxuriant grasses, and approaches the ridges of the Rocky mountains at Fort Laramie. By continuing up the North Fork of Platte, the country becomes more broken, yet affording most excellent and abundant pasturage, and interposes no obstacles to the construction of a railroad, till we arrive at Mineral Point, where the river gorges through a canon of the western spur of Wind River mountains, and the wagon road leaves the river and passes over the mountain into the valley of Sweetwater.—To secure a uniform grade, as a matter of necessity, the railroad must pass through this canon, continuing along the river to its intersection with Sweetwater, thence up the Sweetwater to its source. (Here I beg to refer you to a rough diagram accompanying this communication.) Now, instead of continuing through the South Pass, I wish to direct the attention of your Company to the great CONTINENTAL PASS, a little north of the South Pass, and existing in that broken district of country lying between the southern spurs of the main chain of Wind River mountains, and the northern spurs of Bear river and the Wasatch ranges, and extending westward from the sources of Sweetwater, across the three branches of Green river to the sources of Portneuff river, thence down it, through a canon in the western spur of Wind River mountains, which also constitutes the southern rim of the great Columbian basin, to Snake river at Fort Hall. You will not fail to observe that the eastern spur of the Wind River mountains is the range through which North Platte gorges by a canon, whose declining ridges bear the name of "the Black Hills," and terminate at Fort Laramie. The country between this ridge and the western spur of Wind River mountains is broken into irregular ridges, as the position of Bear river, Portneuff, the three branches of Green river, and Sweetwater river conclusively demonstrate. From the Forks of Green river, where Fremont turned back in 1842, to the sources of Portneuff, cannot much exceed fifty miles in distance.

A bifurcation from the canon of Portneuff, may be continued through a succession of valleys, extending through the entire territory of Utah, terminating on the Pacific at San

Diego. A branch extending westward from Great Salt Lake City, would also pass over another district of country of gradual elevations and depressions, intersecting a succession of mud lakes in which Pitt river takes its rise, a tributary of the Sacramento, which opens up another highway to the ocean, terminating at San Francisco; but the great water grade of the continent, is immutably fixed and established along the Platte, the Continental Pass, and the Columbia river; the eastern slope of which boasts an average grade of  $3\frac{1}{2}$  feet, and the western slope 6 feet to the mile.

From Fort Hall, the valley of Snake river extends more than six hundred miles to the north, affording excellent and the most abundant pasturage; westward, and immediately opposite the fort, commences the great volcanic crater, and lava plain, the extent of which is over 100 miles east and west, by 60 north and south—the texture of whose scorified crust is about the consistency of pot metal and junk bottles, with little craters jutting out upon its surface, and whose succeeding waves hardened as they flowed, leaving their wave-like impressions as mementoes of the volcanic action that heaved forth the molten mass.

The three Buttes are the remnant of a chain of mountains that must have been swallowed up or consumed in this mighty volcano; the upheaval of the molten masses forced its ashbeds to its extremest bounds, in which barren soil the artemisia and grease bush only flourish—a desert waste.

The great bend from which Snake river takes its name, forms the southern boundary to the great lava plain; from subsequent volcanic action, a rent or chasm has been produced in its southern rim, through which Snake river now flows, and in which the great Sho-Sho-Ne Falls are located.

A new road, recently opened from Fort Hall, trails along the northern edge of the lava plain, crossing the points of the spurs of Salmon River mountains, passes through numerous intervening valleys luxuriant with grass, and rich in gold and diamonds, uniting again with the old wagon road before reaching Boise river. This route offers every inducement to the construction of a railroad, from the fact that it passes through one of the richest mineral districts on the continent—the lava plain is a mass of iron, some of the mountains north are iron ore, some are granite, some gold bearing quartz the wash from whose rugged slopes, has deposited the glittering "dust" with the rich, alluvial soil of the valleys, which also mingles with the diamond bearing ash-beds of this once active volcano.

From Fort Boise, the way becomes more rugged and interposes the most formidable obstacles on the route; the course of the river

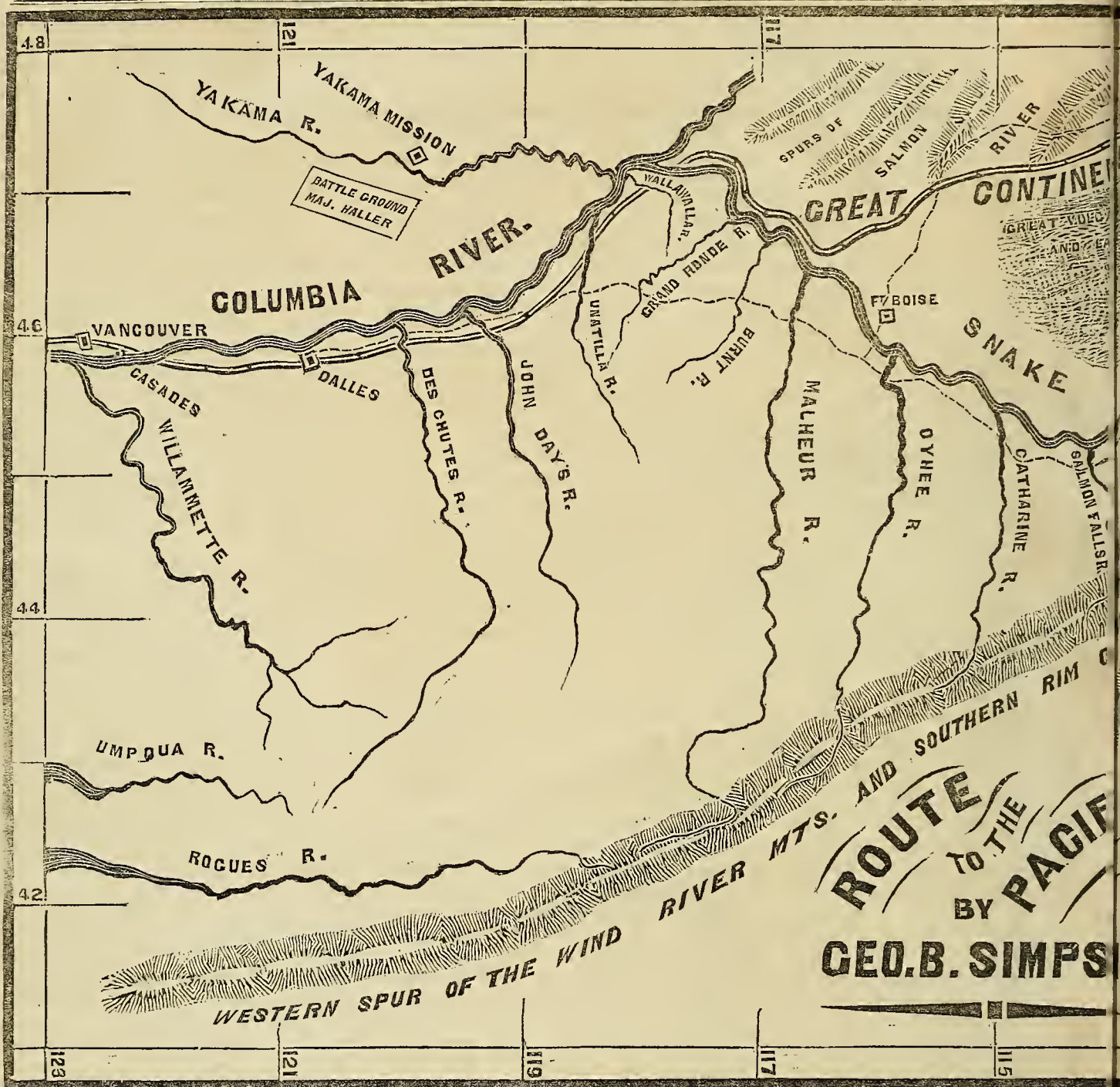
is nearly north, surging through succession of canons in Burnt river mountains, caused perhaps, by the same internal convulsion that produced the chasm in the southern rim of the lava plain; previous to which catastrophe, the whole interior basin of the Columbia must have been a vast inland sea. The Burnt River mountains are principally barren of timber, yet their surfaces are adorned with a luxuriant carpet of "Bunch grass," which always ripens and cures into hay on the stalk, of a rich golden hue, whose saccharine qualities equal, in nutriment, our oats in the straw. Entering the canons of Burnt River mountains, the scenery becomes surpassingly grand and picturesque, while they interpose no absolute barrier to a uniform water grade from ocean to ocean; debouching from the wild profusion of these mountain masses, the river and the road pass out into a valley of unequalled pasturage and fertility of soil, embracing in its area the waters of Lewis' Fork, Walla Walla, Umatilla and Columbia rivers.

There is no portion of the world, of which I have any knowledge, where nature has so lavishly poured out her stores for the sustenance of man and beast, as in these valleys; rich in fertility of soil, rich in mineral wealth; rich in fish and game, salubrious in climate, fortunate in all things. We are now on the banks of the Columbia river; a noble stream, bearing the name of a great and wonderful man a reference to whose bold and noble daring, carries us back to the dawn of civilization—the intellectual light that burst like a meteor on the waning gloom of the dark ages. Continuing along the Columbia to the Dalles, we arrive at the eastern slope of the Cascade mountains; here the river enters another mighty canon, offering the greatest facilities for the construction of a railroad, on either shore, and opens up the great highway to the ocean! These mountains are heavily timbered with pine, fir and cedar. The valleys are fertile and well adapted to agriculture, being interspersed with alternate districts of timber and prairie, well watered, affording ample hydraulic power. The entire body of the Columbia river, where I now am, may be appropriated to hydraulic purposes, which is also the case with the Willamette at Oregon city, and almost every other stream on the Pacific seaboard.

Continuing from the Cascades down the north bank of the river to Vancouver, thence to the mouth of the Columbia, with a bifurcation from the corolity to Olympia on Puget's Sound, and the great transit of the continent is accomplished! the European and the Oriental commerce is connected! its current changes and its tides ebb and flow.

We are now in that portion of the world, according to Humboldt, where the most prolific vegetable growth exists upon its surface;





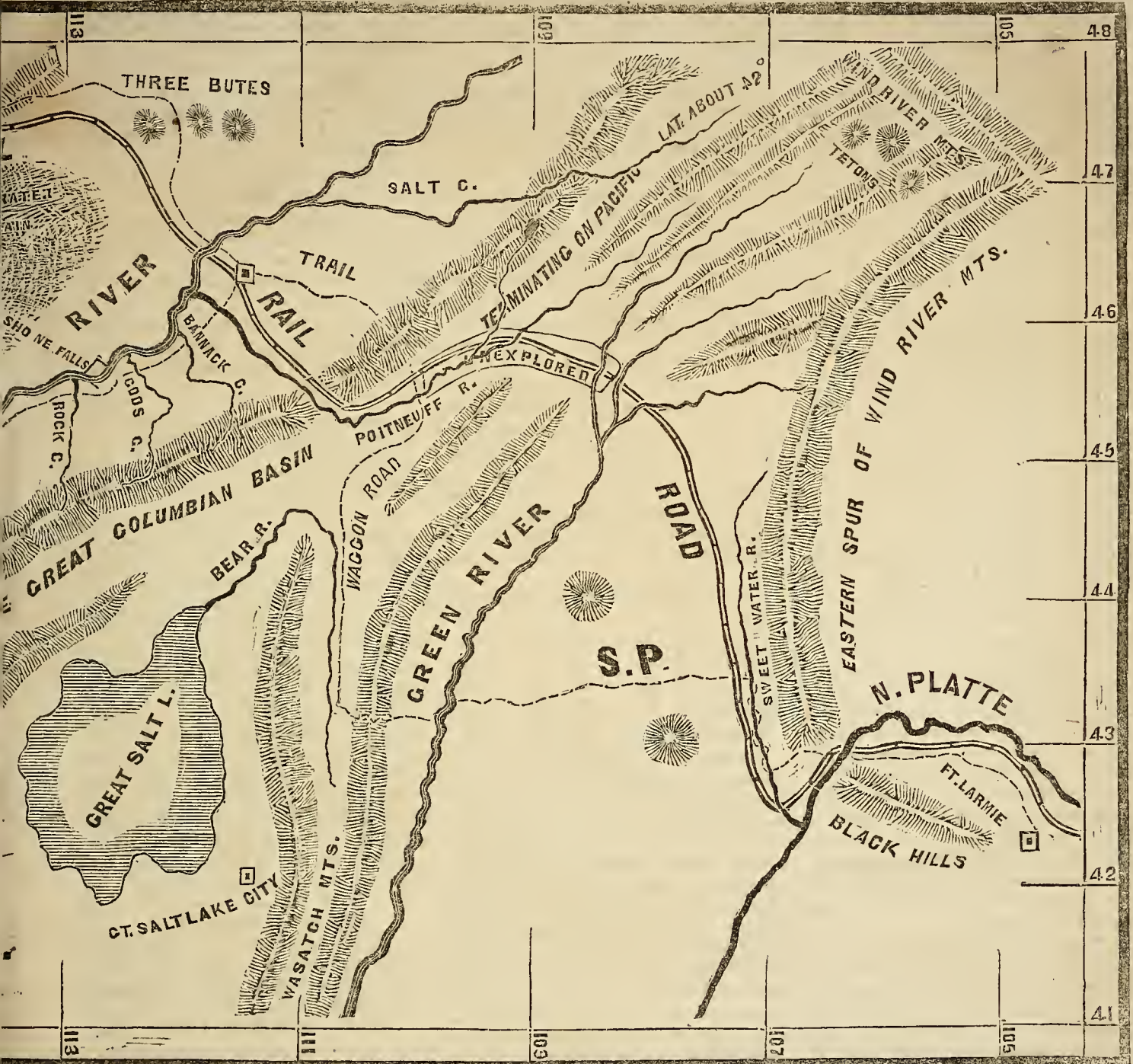
according to the same author, in consequence of the semi-annual wind currents, which gently flow from the pole towards the equator during the summer season, and from the equator towards the pole during the winter season, there exists a difference in the mean temperature of the atmosphere of 14 deg. in summer, and 18 deg. 12 minutes in winter; this difference is in favor of the Pacific seaboard, and develops the astonishing truth, that from the same parallel of latitude, the mean temperature of the atmosphere on the Pacific coast, is carried 840 geographical miles to the north in summer, and 1092 geographical miles in winter! This is owing, perhaps, to the simple fact, that there exists

upon the planet four wind currents, two in each hemisphere, semi-annual in their course, which flow in a dense surface current from the pole towards the equator, where they become heated, rarify, ascend and flow back to either pole again; the changes of these monsoons are caused by the relative position of the planet to its primary. (This is an important truth for the consideration of aeronautists.)

Olympia, the seat of our territorial government, is situated at the southern extremity of a succession of inland harbors, the extent and capacity of which are not equaled in the world; they abound in fish of almost every variety, and will, some day, become the ac-

tive theatre of strife, in which the hardy sons of "old ocean" will vie with each other in a peaceful distribution of their watery wealth. Hard coal makes its appearance on the opposite bank of the Columbia river from where I now write, is more abundant at Puget's Sound and on Vancouver's Island, and, no doubt its deposits abound throughout the whole extent of the northwest coast. Intermittent forests of fir, cedar and pine skirt all these waters, affording lumber, spars, and ship timber of the finest quality and greatest abundance as articles of export. Gold, silver, copper, lead, iron, coal, all abound in various localities, and in the Russian Possessions, copper is so abundant, that it induces the opinion that it may





extend diagonally across the continent, developing itself on the northern shore of Lake Superior, with traces on the Atlantic seaboard in Connecticut.

The whale fisheries of the Pacific ocean and the China seas, has ever attracted the capital and attention of commercial men, and will in the future, engage a vast amount of American capital and American shipping, whose enterprising sons will draw forth the untold treasures of the mighty deep.

But what are all the advantages I have enumerated, in a national point of view, to the blessings flowing immediately from the highway itself! A new world of hope, of interest, of commerce, of wealth, of glory, is

opened up to the enterprise of American citizens—the Oriental commerce pours the collected treasure of a thousand ages into the bosom of the great Republic, while the garden of the continent and the Eden of the world send forth the rich products of its prolific soil to feed the pauper millions of the East; the wooden cross of Paganism bows in reverence to the Eagle and the Banner, and the gloom of ignorance and superstition is swept away by the rising splendor of the intellectual sun of Liberty.

We justly venerate the fathers and founders of the Republic, but how much more will future generations venerate those who are instrumental in accomplishing this great

good? Would to God, that every American earth was lighted with the fire of our forefathers—the fire of patriotism that kindled the revolution—then would their motto be, the Continental Railroad—the Highway of Nations—the European and the Oriental Commerce! Then, indeed, might we all exclaim with the French tourist, as he ascended the summit of the Allegheny mountains and looked over into the great valley of the Mississippi, after a moment of breathless and bewildered suspense, "Attention, the Universe! Nations, about face!! Behold the seat of Empire!!!"

Your obedient servant,

GEO. B. SIMPSON.







Olympia, the seat of our territorial government, is situated at the southern extremity of a succession of inland harbors, the extent and capacity of which are not equaled in the world; they abound in fish of almost every variety, and will, some day, become the ac-

affording lumber, spars, and ship timber of the finest quality and greatest abundance as articles of export. Gold, silver, copper, lead, iron, coal, all abound in various localities, and in the Russian Possessions, copper is so abundant, that it induces the opinion that it may

But what are all the advantages I have enumerated, in a national point of view, to the blessings flowing immediately from the highway itself? A new world of hope, of interest, of commerce, of wealth, of glory, is

We justly venerate the fathers and founders of the Republic, but how much more will future generations venerate those who are instrumental in accomplishing this great

GEO. B. SIMPSON.



## CLIMATOLOGY ON THE OHIO—ISOTHERMAL LATITUDES.

There are two sciences of great interest and value, which are yet in their infancy; but which will probably fill a large space, in the knowledge and developments of the next generation. These are Ethnography, and Climatology. The former is altogether a social science, the latter a physical one. The former, if properly pursued, will give a fuller and better knowledge of the history of Man, than all other sciences, and the latter, of the laws which regulate his condition on earth. Neither of them could have been known, till other sciences, essential to their study, were developed, and laid the foundation for these.

The subject of Climatology in the United States is of great interest, especially in its relation to health and agriculture. Taking the United States in its whole length and breadth and there is a *climate for every known plant*; but the climate most suitable for certain plants—that is, the one which will bring them to the greatest perfection is scarcely yet discovered. An example of this may be found in the doubts yet existing, as to the best locality for the grape, and the varieties to be cultivated. We propose here to notice only some general laws of Climatology, which are supposed now to be settled:

1. Climate does not depend necessarily on *latitude*; that is, it does not depend on being a certain number of degrees from the tropics, in order to produce a certain climate. At an equal number of degrees of latitude, the climates of two places are found to be very different. It is ascertained, however, that a certain *curve* going round the earth, has at every point, the same climate, in the main features. This curve is called an *Isothermal line*. The reasons why this Isothermal line is not the same with a line of latitude, are supposed to be these.

2. That the *currents of wind* carry with them extensive *strata* of air, either cold or hot, which modify the temperature and consistency of the ordinary air, where they prevail.—the currents of wind, being themselves modified, by vast masses of ocean water, and by the great rarification of the atmosphere at the tropics, and by mountain chains of land, are necessarily irregular; and, hence, the currents of the same temperature are *deflected* both above and below a uniform latitude.

3. It is discovered, that *Electricity* is a great and universal force, prevailing in greater or lesser quantities at different times and places. This modifies and changes vegetable growth. The laws of electricity, in their relation to vegetable life, or atmospheric changes have not been fully discovered, and it is these laws, which unquestionably will be discovered hereafter, and give interest to the future study of Climatology.

Some of the principal facts, in relation to

the climatology of the Ohio valley, we will now state:

*First.* We will take Cincinnati and New York, as two places whose difference of *climate*, we want to discover. The latitude of Cincinnati is  $39^{\circ} 6'$ , that of New York  $40^{\circ} 42'$ . The difference of latitude there is only *one degree and thirty-six minutes*; which in itself, would, not occasion a very great difference of climate; but, when we come to look at the Isothermal line; which can be found on a good map of Physical Geography), we find that the *actual difference* is fourfold that indicated by the latitude! In fact, Cincinnati is in a much milder climate, than New York. The Isothermal line of Cincinnati passes through Lyons (France), Milan (Italy), Constantinople and Southern Japan. On the other hand the Isothermal line of New York, passes through Belfast (Ireland), Berlin (Germany), Gulf of Perekop (Crimea), and Jesso (Northern Japan). To understand the difference of climate, thus produced, we have prepared the following table, representing the latitudes of the principal places on the Isothermal lines, and the difference of latitude:

|                     | Cin., Iso-Ther. |      | N. Y. Iso-Ther. |      | Difference. |      |
|---------------------|-----------------|------|-----------------|------|-------------|------|
|                     | Deg.            | Min. | Deg.            | Min. | Deg.        | Min. |
| New York.....       | —               | —    | 40              | 42   | —           | —    |
| Cincinnati.....     | 39              | 6    | —               | —    | 1           | 36   |
| Belfast.....        | —               | —    | 54              | 35   | —           | —    |
| Lyons.....          | 45              | 20   | —               | —    | 9           | 05   |
| Berlin.....         | —               | —    | 52              | 30   | —           | —    |
| Milan.....          | 45              | 29   | —               | —    | 7           | 01   |
| Perekop.....        | —               | —    | 45              | 55   | —           | —    |
| Constantinople..... | 41              | 00   | —               | —    | 4           | 55   |
| Jesso.....          | —               | —    | 40              | 00   | —           | —    |
| Southern Japan..... | 36              | 00   | —               | —    | 4           | 00   |

We observe here two remarkable facts; *first*—that, in crossing the Atlantic, the Isothermal lines of both Cincinnati and New York, are rapidly *deflected* to the north, but that of New York in a much greater proportion. In the longitude of Belfast (Ireland), these lines are nearly ten degrees apart.—*Secondly*, after passing the longitude of Berlin (in the north of the continent), they are again rapidly *deflected* to the south and approach nearer together; so that, in Japan, they are only four degrees apart. In Japan the Isothermal line of Cincinnati actually passes south of this place; having recovered more than all it lost, in traversing the continent of Europe.

Now, if the Isothermal lines be correct, the climate of Cincinnati will admit the cultivation of such plants as are easily raised at Lyons, Milan, Constantinople and Japan.—But, the climate of New York will not admit the cultivation of plants which will not grow successfully in Berlin, Perekop, or North Japan. Let us see how this works practically. Take, for example, the VINE. At Berlin and Belfast, on the Isothermal line of New York—the vine cannot be cultivated, in the open field, as a wine producer. But around the cities of Lyons, Milan and Constantinople, on the Isothermal line of Cincinnati, are some of the finest wine countries of

the world. Hence, we see, at once, the reason why Cincinnati is and is likely to remain one of the best wine districts on the Continent of America. It is true, that some other circumstances, such as soil and shelter, modify the growth of the vine; but, it can change but very little, its capacity to produce large and profitable crops, that is to become a *staple* article of produce. Thus, the Catawba, our best wine grape, grows very well on the Hudson; but, there is no probability of its producing wine there to any extent. There are too many contingencies against it to make it a staple article.

We add here the following examples of the mean temperature, of the whole year, at several places, where wine is made, as compared with Cincinnati:

|                                  | Deg. | Min. |
|----------------------------------|------|------|
| Cincinnati—Mean temperature..... | 53   | 7    |
| Turin (Piedmont).....            | 53   | 1    |
| Vevay (Switzerland).....         | 50   | 8    |
| M. Juba (Rhine).....             | 50   | 3    |
| Dijon (France).....              | 52   | 9    |
| Valley of the Rhone.....         | 53   | 3    |
| Astrachan (Caspian Sea).....     | 50   | 0    |

But, in addition to *mean* temperature, we must take into view *extremes*, and these are far greater in our climate than in Europe. Our summer temperature is greater, and our winter temperature less. This it is which makes the European grape almost impossible to grow in this climate.

In addition to what we have said above, it may be remarked, that *cereals* and common vegetables are subject to much less delicacy and sensibility to climatic changes, than the vine. Hence it may be assumed, that any vegetable plant which will mature in Southern Japan, will also mature in the Valley of the Ohio, and as there may be many valuable plants there, unknown to our country, it will be well worth while to make an experiment on all such as can be brought here.

## UNITING THE OCEANS.

Under the above head, the Philadelphia *Bulletin* has a notice of a proposition presented in the *Nautical Magazine* for a ship canal to unite the Atlantic and Pacific Oceans in the northern part of South America. The following from the *Bulletin* gives the outline of the plan:

"A project for a ship canal has lately been broached, which, although spoken of before, has only lately been considered worthy of serious attention. The route is by the Atrato river, which enters the Gulf of Darien about the eighth degree of north latitude. Surveys have lately been made by American engineers, who report most favorably. The bay of the Atrato is very spacious and deep, but the mouth is at present obstructed by sandbars. The river is broad, and is said to have an average depth of 47 feet for 70 miles from its mouth, with a channel way of from 800 to 1200 feet in width. The line for the proposed inter-oceanic communication is to ascend the Atrato 63 miles, and then enter the river Truando, one of its tributaries, which is said to be now navigable for vessels drawing 12 feet of water, for a distance of 38 miles from



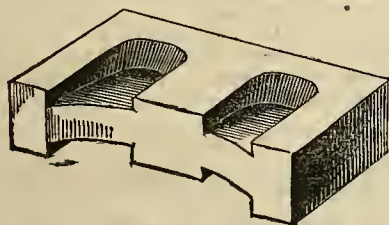
its mouth. It is proposed to widen and deepen the river for 36 miles from its confluence with the Atrato. By this means a point will be reached 25 miles distant from the Pacific Ocean. But there are mountains here, and it is proposed to make an open cut through the rock, and thus reach the ocean. This cut will average 96 feet in depth, excepting a tunnel three and a quarter miles in length. The prism of the canal is to be 200 feet wide and 30 feet deep at extreme low tide."

The cost is estimated at \$147,000,000, and it is conceded that it would require the labor of 25,000 men for a period of *twelve years*. The wages of these laborers alone would amount to \$90,000,000. And after all this vast outlay of capital and human energy, it would not still give us a road to the Pacific on our own soil, or capable of being protected by our own soldiers.

#### CONKLING'S PATENT BRICK—NEW AND SUBSTANTIAL BUILDING MATERIAL.

There is no class of improvements of greater value, or more general importance than those which relate to improvements in materials for building. And there are also none which has received so little scientific investigation or attention from those more competent to make improvements in them, as this same class of building materials. Wood, stone, iron, brick and building blocks, made of sand and lime, have all been used, and it is still asserted that some other material must be found either cheaper or more durable.—Now, while considerable attention has been bestowed on the selection of material, little advance has been made in the *form* in which that material has been used. Bricks, for instance, of the present day, are substantially the same as the bricks of the pyramids; they are simple parallelopipedons of clay made hard by the action of fire.

Now the improvement, the name of which stands at the head of this article, consists in giving to the material a better form to secure uniform hardening in the kiln, and at the same time to obtain the means of cementing the wall with perfect certainty. The form of the brick, as shown in the accompanying cut,



in general appearance resembles the common brick; the back edge is hollowed in the form of a curve, and on the upper and lower sides are dove-tail indentures also of regular shape. Now, it is easy to see that when a wall is laid up with these bricks, and grouted well with good mortar, it becomes a solid mass of great strength and compactness. It will also be seen, that with these peculiarities the bricks

in the kiln are exposed more fully to the action of the fire than the ordinary brick can by any possibility be. Hence they are rendered hard through their entire substance.

**MANUFACTURE OF THE BRICK.**—The manufacture of the improved brick requires no greater skill nor labor than that of the ordinary brick. For common *mould* brick, the cavities are made only on the lower side, but deeper. Hence the ordinary mould, with pieces of wood of suitable shape placed on the bottom, is all that is required. The clay of proper consistency is forced into the mould as usual, and smoothed at the top with the ordinary scraper. For *pressed* brick, the cavities may be made either on one or both sides of the brick, as may be desired.

The burning of the brick is performed in a kiln as usual. But as the cavities of the brick admit the hot air thoroughly to every portion of the substance, there is less liability to warp and shrink unequally. The cavities aid the action of the fire in the interior of the brick and consequently materially reduce the time of burning. A saving of full *twenty per cent.* in the amount of fuel is thus obtained. Thus brick may therefore be made *cheaper and more uniform in shape and density* than ordinary brick.

**LAYING THE BRICK.**—The improved brick are laid in the usual manner, breaking joints, with as thin a layer of mortar between the courses as can be put there, and grouted well with good mortar. They are laid as expeditiously as common brick and much more so than fine front brick when well pointed. The cementing of the wall by the grouting filling up, the dove-tail cavities being thus scientifically provided for, there can be less deception in making perfect joints, than with ordinary material. The grouting of common brick is always liable to imperfection, owing to the spreading of the mortar in the thick joints and stopping the flow of the grout. This cannot be the case with the improved brick, as the spaces are of sufficient size to prevent such an accident.

The appearance of a wall laid with these brick is much finer than that of one laid with common brick. The brick being of uniform shape and size, and laid with thin courses of mortar, gives a much more regular and handsome appearance than can be obtained with the best quality of ordinary brick.

A saving of ten per cent. of material is thus accomplished, by which a larger quantity of brick can be made from the same amount of material and a considerable reduction effected in cost of transportation, where bricks are exported.

**ECONOMY OF ROOM.**—Among the most important advantages of these brick, may be mentioned the great solidity of the walls built of them, and consequent economy of room. Walls built of this material are fully *one-fourth*

stronger than those built of common brick. Hence *one-fourth the room* occupied by walls of ordinary brick can be saved by the use of the improved brick. This in large cities, where ground can only be bought by covering it with gold, is an object of the first importance.

**DURABILITY OF BUILDINGS.**—One of the cause of waste and delapidation and consequent loss in ordinary buildings is the action of the weather on the thick mortar joints of the brick walls. This is entirely obviated by the improved form of the brick. The uniformity of sizes and shapes enables the mason to make the thinnest possible joints, and consequently gives the least possible opportunity for waste by rain and frost. The millions of capital now invested throughout our country in brick walls, unscientifically constructed, which are constantly crumbling from the action of the weather, are just so many millions of lost capital every twenty or thirty years. These millions may be saved by the use of more substantial and durable materials.

**SAFETY FROM FIRE.**—One of the great causes of loss by fire is the imperfect cementation of walls. In laying ordinary brick the mason often carelessly leaves large spaces unfilled with mortar, and that too, not unfrequently around the flues of the chimneys.—These defects are of such a nature that they cannot be discovered after the wall is erected. The result too often shows itself in the burning of the best and most elegantly constructed mansions.

Such being the character of this improvement, it is obvious that the best buildings will ultimately be constructed of this improved material, both on account of durability, finish, cheapness and safety. Master Masons and Carpenters purchasing county rights will thus be able to control the erection of the best and most profitable buildings in the counties where they reside, and thereby secure contracts, which they could not otherwise obtain.

The patentee of this valuable improvement is Edgar Conkling, Esq., of Cincinnati, office 106 west 4th street. Parties wishing further information will please address the patentee, enclosing postage stamp to pay postage on circulars giving full information.

#### MEMORIAL FOR A PACIFIC R. R.

We are receiving returns from the memorials sent out, praying Congress, in its wisdom, to provide for the building of a Pacific Railroad. The following letter, accompanying a memorial signed by over 230 individuals, is so full of intelligence and public spirit, that we cannot refrain from publishing it:

MADISON, IND., Feb. 4, 1856.

Ed. R. R. Record.

KIND SIR:—I send you a few signatures to the "Memorial for a Pacific Railroad."



The severity of the weather, and impaired health, has prevented me from circulating the memorial as extensively as I otherwise would have done.

The Pacific Railroad project meets with almost universal favor in this part of the State. Occasionally we encounter an *old foggy*—those *rough-locks* to all improvements—who sets up his opinion as the standard which is to govern the powers and acts of Congress in the disposal of the public domain; but, the Pacific Railroad will be built notwithstanding, and the time is fast approaching when one united voice will go up to Congress, from the length and breadth of our republic, demanding its construction.

To those who have not yet returned the memorials, we would say that we would like to have all those that are designed for us sent early enough to reach us by March 1. Those who design sending to their friends in Congress, would also oblige us by sending them as early as that date.

That a Railroad to the Pacific is the greatest commercial and national want of our country at this present moment, we have not the slightest doubt, and that Congress has the intelligence to perceive this, and will provide for it, if the members can be satisfied, that such is the wish of the people, we have also never doubted. We say then to all who interest themselves in this matter, go on, fill up your memorials with signatures, and let us make for our national legislators a clear path to provide this greatest blessing that our nation can desire.

#### STATISTICS OF STEAM NAVIGATION IN THE MISSISSIPPI VALLEY.

We observe that Captain Shallcrop has furnished the *Louisville Courier* with a statement of the steamboats, and their tonnage, in the Mississippi valley. In the year 1851, Mr. Corwin, Secretary of the Treasury, provided the entire statistics of steam navigation in the West. By aid of these two reports, we can give a very accurate view of steamboat navigation, on the rivers of the West, for these two periods, and show their relative growth. We leave out of view the ports of Mobile, Galveston and Apalachicola, included in Captain Shallcrop's report, as not belonging to the Western rivers. The following is a comparative table, at an interval of nearly five years:

| Places.                | 1851   |          | 1856         |          |
|------------------------|--------|----------|--------------|----------|
|                        | Boats. | Tonnage. | Boats.       | Tonnage. |
| New Orleans.....       | 132    | 34,735   | 139          | 41,405   |
| Pittsburg.....         | 112    | 16,942   | 143          | 26,568   |
| Wheeling.....          | 46     | 7,199    | 48           | 7,448    |
| Cincinnati.....        | 111    | 24,709   | 91           | 25,600   |
| Louisville.....        | 61     | 15,180   | 89           | 29,706   |
| Nashville.....         | 18     | 3,578    | 42           | 9,671    |
| St. Louis.....         | 131    | 31,833   | 168          | 43,518   |
| Other places.....      | 9      | 700      | 17           | 2,745    |
| Aggregate.....         | 610    | 134,868  | 737          | 186,061  |
| Increase of Boats..... |        |          | 20 per cent. |          |
| " of Tonnage.....      |        |          | 40 "         |          |

It will be observed, that the *tonnage* has increased much faster than the *number* of boats. This has been the case for the last twenty years. The first class boats are now double

the tonnage of the same class of boats in 1835.

It must also be remembered that the above table does not give either where the boats are *built*, or where they are *owned*; but, simply where they are enrolled, with their number and tonnage. In a former number of the *Record*, we gave the statistics of steamboat *building* and to the table above we will now add the number of crews (including officers), supposing the average crews to be the same now, as when they were ascertained in 1851, and reported to the Senate.

|              | Steamboats, Crews. |        |
|--------------|--------------------|--------|
| In 1851..... | 610                | 12,412 |
| In 1856..... | 737                | 14,894 |

## RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

### PUBLISHERS' CIRCULAR.

#### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The *VALLEY OF THE MISSISSIPPI* is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the *RECORD* is to promulgate authentic Statistics and reliable information of the *RAILROADS, BANKS, MANUFACTURES, and COMMERCE* of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the *RECORD* has furnished, and will continue to furnish, in still larger proportion, a great amount of *STATISTICAL INFORMATION* on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The *STOCK TABLES* in the *RECORD* are made up from the actual sales in Cincinnati,

*Fifteen thousand* officers and men employed in navigating steam vessels on the waters of the West is certainly a goodly number. Of all the steam vessels employed in the United States, *nearly half* are on the rivers of the West, and if we were to include the ports of the Gulf—quite half.

#### SOUTHERN COMMERCIAL CONVENTION.—

This body closed its labors on the 2d inst., and among other things passed a resolution in favor of repealing the duty on railroad iron. Also, others in favor of the Southern railroad route from the Mississippi to the Pacific.

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The *STOCK SALES* are from the reported public sales in Cincinnati and New York.

The circulation of the *RECORD* has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the *Railroad Record* as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the *RECORD* is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the *RECORD*, \$3 per annum, *in advance*.

|   |        |
|---|--------|
| One Square, single insertion.....           | \$1 00 |
| " " per month.....                          | 3 00   |
| " " per annum.....                          | 20 00  |
| One column, single insertion.....           | 4 00   |
| " " per month.....                          | 10 00  |
| " " per annum.....                          | 80 00  |
| One page, single insertion.....             | 10 00  |
| " " per month.....                          | 25 00  |
| " " per annum.....                          | 200 00 |
| Cards not exceeding 4 lines, \$5 per annum. |        |

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, FEBRUARY 18, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON } ASSOCIATE EDITORS.  
T. WRIGHTSON }  
CINCINNATI, ..... MONDAY, FEB. 18.

#### THE THREE GREAT ROUTES TO THE PACIFIC.

There may be at some period (we pretend not to say when) THREE great Railroad Routes to the Pacific. Many persons cannot imagine how *one* is to be built, and therefore will be inclined to ridicule the idea of three. But we say, there may be three, and that, too, at no remote period. The reasons are very obvious, when we consider that the people of this country have always accomplished whatever was *necessary to be accomplished*. Now, both commerce and geographical relations require *three outlets* on the Pacific from the Mississippi Valley. These three outlets are, Puget's Sound, San Francisco and San Diego. Now, if we are to make *but one route*, the case is a clear one—the Texas route *must* be preferred. It can be made for *half the money, and in half the time, and run with half the cost*. These facts are decisive with regard to one route. But we will here consider this subject in that broad light which looks to all the great interests and all the great parts of the Republic, with a view to show how this can be done, and what are the true relations of the great routes.

1. *The possibility of constructing three Railroads to the Pacific.*—To do this will require 6,000 miles of Railroad. This is just equal to what the people of the United States have done in *two years*. It is self-evident, then, that both labor and money are sufficiently abundant to accomplish this. But in order to make it easy, let us suppose the work is accomplished in *six years*—then there will be but 1,000 miles for each year, and 335 miles on each route. The work, therefore, is entirely possible. The cost at \$40,000 per mile will be *two hundred and forty millions*; one-half of which the government may grant in lands, and the other half will be raised by companies. This is entirely a feasible plan, and may be accomplished in a short period. We do not say that it is desirable that all these routes should be adopted and commenced *at once*, but we are now showing what is possible, and what may at some time come to pass. Let us now look at the geographical relations which require this:

2. *The three Ports.*—From all the information we have yet received, it would seem there are but three really good ports on the

Pacific, within the American boundaries. The northern one is somewhere on Puget's Sound, the second at San Francisco, and the third at San Diego. The latitude and distances of these places are as follows:

Seattle (on Puget's Sound)..... 47 deg.  
San Francisco..... 37 deg. 30 min.  
San Diego..... 32 deg. 40 min.  
From the Straits of Fuca to San Francisco..... 800 miles.  
From San Francisco to San Diego..... 500 "

Thus we see that these places are far enough from each other to demand a separate trade. Supposing one route to leave Milwaukee, Wis.; the second St. Louis, and the third Fulton, Ark.—these routes will have a belt of 500 miles broad between each two. As the whole length is 2,000 miles, there is room on the routes of these three railroads for *twenty States of double the ordinary size*; then allowing that only half the lands are arable, there will be good land enough to make these States equal to the old ones. And why should there not be twenty States instead of four or five? There is no reason, except that *without railroads these States cannot be made productive*. To increase national wealth therefore, and secure increased means of subsistence to the increasing millions of this country, no plan of improvement could be equal to this very one of constructing railroads from the Mississippi Valley to the great ports of the Pacific.

3. *Comparative Merits of Routes.*—On this head we shall take only such data as are furnished by the U. S. Surveys, and such as has been added to them by recent information. The following are the data:

| Route.   | Distance by Proposed Route. | Summit of the Highest Pass. | Tunnels.                   | Climate. Lowest degree. |
|--|-----------------------------|-----------------------------|----------------------------|-------------------------|
| Route near the 48th parallel.                          | 2,025 miles.                | 6,044 feet.                 | at elevation of 5219 feet. | 30° below zero.         |
| Route near the 41st from Coun. Bluffs to Benicia.....  | 2,032 miles.                | 8,373                       | None.                      | 20° below zero.         |
| Route near the 32d parallel, from Fulton to San Diego. | 1,621 miles.                | 5,717                       | None.                      | 10° above zero.         |

This table is conclusive upon certain highly important facts.

1. Taken as a proposition to go from the navigable waters of the Mississippi river to the Pacific Ocean, the route through Texas is 404 miles nearer than the Northern route, and 411 miles nearer than the Middle route. But if it were a proposition to go to the *navigable waters of the Pacific*, then it is but 1,360 miles from Fulton to Fort Yumah, at the mouth of the Gila, whence steamboats run at all seasons.

2. Supposing that each route cost the same *per mile*, then the Texas route, being 400

miles nearer, will cost just *sixteen millions* of dollars less than either of the others.

3. The *winter climate* of the 32d parallel is 40 degrees milder than that of the Northern route, and 30 degrees milder than that of the Middle route. If but one route is to be made to the Pacific, then the question is entirely settled in favor of the Texas route, but we undertook to show that *three* railroads to the Pacific are entirely possible and practicable. If they were made, the following will be a near approximation to the cost:

Route of the 48th parallel, 2,025 miles, at \$40,000 per mile..... \$81,000,000  
Route of the 41st parallel, 2,032 miles, at \$40,000 per mile..... 81,280,000  
Route of the 32d parallel, 1,621 miles, at \$40,000 per mile..... 64,840,000

The Government Engineers make the cost of the Northern routes much greater, and we have no doubt that, owing to the far less favorable climate for construction, the cost per mile will be greater; still we believe it fair to assume \$40,000 per mile as sufficient.

The aggregate cost of these roads will then be equal to \$227,120,000. Half of this is \$113,560,000, which we suppose the Government will be willing to furnish. At \$1 per acre, this is equal to 113,560,000 acres, or 177,400 sections, or about 30 sections per mile. This is about *one-eighth* of the lands owned by the United States in the unsettled regions, and if, by this grant, the Railroads to the Pacific were actually made, there can be no possible doubt that the Government lands would advance in value far beyond the outlay.

The interest on the bonds, and the time necessary to secure business in an unsettled country, may require a larger amount of lands, but if even one-fourth the Government lands were required, there is no doubt that, as a simple government measure, for revenue, the Treasury would be the gainer.

If such a grant were made, the question would still remain open, whether any company would avail themselves of such a proposition, and if they did, whether one or all the routes would be taken, and all the roads constructed. This would be very doubtful, but this plan would throw them open to a fair competition, and the respective routes would have to be decided on by the best judges in the world—*those who are to invest capital in them*.

In this brief review, we have only aimed to set out the three routes distinctly, and to show, if they are made, in what manner they can be accomplished, unless the Government steps in, and undertakes the magnificent enterprise as a Government work.



### THE RIVER OHIO—ITS PHYSICAL FEATURES AND MEANS OF IMPROVEMENT.

In the year 1852, Mr. CHAS. ELLET, one of the most eminent Engineers in America, made a report to the War Department, on the physical character of the Western rivers and their means of improvement. In the following year, 1853, this memoir was published in Philadelphia, and is one of the most valuable scientific documents which has been furnished to the country in many years. It was noticed in the *Record* (vol. 1 page 145), and we refer to it now in connection with the effort of Mr. COPLEY before the Pittsburg Board of Trade, and in other cities, to revive an interest in the improvement of the Ohio. The plan of Mr. Copley, is to *Lock and Dam* the Ohio, which will require about fifty dams at 20 miles apart. It is said that these will cost about *seven millions*, that they will *stand the floods*, and that they will make navigation *uniform*. Two questions, however, may be asked in reference to this mode of improving the Ohio:

1st. Supposing the locks and dams, to make the Ohio navigable—at the lowest stages of water—what effect will they have at moderate stages? Supposing them necessary, at the low stage, and that at the high stage boats will pass over them—will the boats not have to pass through them at the moderate stage? If they do, will not these locks and dams be *positive obstructions* in the moderate stage? We do not decide the case; but, ask these questions, that they may be duly considered.

2nd. Can the States, by charters, impair the National sovereignty over the Ohio? Ought the people to yield the navigation of a river, a thousand miles in length, to a commercial company? It seems to us, that a lock and dam in the Ohio, would be enjoined and removed by the Supreme Court.

We say not these things to impede or discourage any proper improvement of the Ohio river; but, to point out some of the difficulties in the way, that they may fairly be met. For example, the period, in which the Ohio is navigable, at a depth of water from five to ten feet, is double as great as all the residue. Now is it not evident, that at that period, the boats which we now see running so freely, will have to pass the locks, and therefore be greatly obstructed. In other words, the obstruction will be greater, than the benefit. The Monongahela has been referred to as an example of successful locks and dams. But this is no parallel case to that of the Ohio. The Monongahela is comparatively quite a small stream. But, independent of that, it so happens that the Monongahela has the *least descent* of any of the tributaries of the Ohio and the Mississippi. The Muskingum has also been improved with locks and dams; but, only three steamboats run on it, and the locks have often given way. These are, therefore *not* examples in point.

The plan of Mr. Ellet, based on long and accurate scientific observation, and measurements was very different. He proposes to *maintain a sufficient depth of water*, for navigation, at all seasons without locks or dams. Now if this can

be done, there is hardly a doubt that it is the best plan. For in that case the *obstructions* inevitably thrown in the way, by locks and dams, would not exist. Mr. Ellet's plan was simply four or five *dams* on the *tributaries* of the Ohio—the Allegheny, Monongahela and Kenawha—by which water enough would be retained in reservoirs to maintain a navigable depth of water at the dry seasons. Now that this plan is practicable is demonstrated from certain established facts. As there seems to be much want of scientific information on this subject, we will state the leading facts and the consequences deduced from them:

1. DRAINAGE OF THE OHIO.—The very first thing to be known, in any attempt to improve the Ohio, is the amount of drainage. The following has been ascertained to be the drainage of the Ohio, at different depths:

| Depth on Wheeling Bars. | Velocity.   | Cubic feet pr. hr. |
|-------------------------|-------------|--------------------|
| 2 feet.....             | 3,500 feet. | 10,000,000 feet.   |
| 15 ".....               | 16,500 "    | 226,000,000 "      |
| 30 ".....               | 24,000 "    | 700,000,000 "      |

That is, at fifteen feet deep on Wheeling bar, the current runs at *three miles per hour*, and discharges more than *two hundred millions of cubic feet per hour*. So the exact drainage at any given depth is easily ascertained.

2. DEFICIENCIES OF WATER.—Assuming any given depth as necessary to navigation, we know the amount of water requisite to maintain the river at that point. By actual observation on Wheeling bar, it is ascertained that the Ohio actually furnishes water enough to *maintain the current at 5½ feet depth in every month of the year*, except October and September. It is only necessary then to determine how much water is required to supply the deficiencies of these months, to know how much is necessary to give 5½ feet water the year round.

|  |                |
|--|----------------|
| The actual discharge for September and October, was..... | 23,760,000,000 |
| To maintain 5½ feet requires.....                        | 52,704,000,000 |

The difference.....26,944,000,000  
is what is required.

3. HOW TO SUPPLY DEFICIENCIES.—The whole quantity of water thus required could be furnished by a reservoir of about three miles square and 100 feet deep, and *three such reservoirs would cost but \$150,000*; (vide Ellet on the Ohio page 280), and the sites for forming lakes of this description, without injury can be found in several places, on the Allegheny, the Kanawha and other tributaries. On the supposition, however, that several of these reservoirs may be necessary and that the cost of the ground may be considerable, it is probable the ultimate cost may reach *two millions*. But what are two millions to the result?

We quote here, the conclusion of Mr. Ellet's remarks on this subject, as conclusive of the whole matter: "It is not appropriate in this place to enter into any detailed estimate of the cost, or description of the mode of constructing such dams. It may be said, however, that they should be formed of massive masonry, set in hydraulic cement, and built more with reference to the part they are to perform, in advancing the commercial prosperity of the country, than with a view to stinted economy. Yet

formed as monuments of the art and enterprise of the age, it is not probable, that the cost of each dam, with its lock, valves, syphons and appurtenances, will exceed \$200,000, or \$250,000.

"It has been the duty of the writer, at former periods, to conduct surveys along a considerable portion of the Upper Allegheny, and the whole of the Great Kanawha, and to become familiar with the character of the Monongahela, as far as it is susceptible of improvement.—Aided by this personal knowledge and the facts acquired in the present investigation, he hazards the opinion, that less than a million and a quarter of dollars will suffice to supply the Ohio with a depth sufficient for boats of five feet draft."

If those who are desirous of making the Ohio river a permanently navigable stream will examine with care, the plan of Mr. Ellet, they will find that it is practicable—that it is cheap, and that its benefit to the commerce of the Ohio will be immense.

Whatever may be adopted as a plan of improvement, for the Ohio, it should be adopted only after a calm and deliberate examination of the whole case.

SOUTHERN COMMERCIAL CONVENTION.—We give below the action of this body relative to the Pacific Railroad, and trust that their recommendations will meet with due consideration by the honorable bodies to whom they are addressed.

Gen Green of Texas presented the following preamble and resolutions:

WHEREAS: The construction of a railroad from the valley of the Mississippi river to our Pacific coast, is promotive of the development of agriculture, the mines and commerce, the defence of that coast in time of war, and its preservation to the Union in time of peace, Therefore

*Resolved*, That considerations of comparative grade, climate and economy of constructing, maintaining and working the proposed railroad is indicated by the Texas Western Railroad charter, upon the line of 32° North latitude, crossing the entire State of Texas, and intersecting the Rio Grande at or near El Paso, thence by the route lately surveyed by Col. A. B. Gray, South of the river Gila, to the State of California, where said river unites with the Colorado of the West.

*Resolved*, That as said road is now under active construction, it is hereby recommended that the Legislatures and citizens of the southern and southwestern States, aid, by all necessary means, the speedy building of said road, and to unite with the main trunk branches intersecting the Mississippi at New Orleans, Vicksburg, Memphis, Cairo and St. Louis.

It was moved that the House proceed to vote direct on the resolution.

The question was put and the motion was adopted.

The question then recurred on adopting the resolution, and it was decided in the affirmative.



## SAN DIEGO—THE COLORADO—RAILROAD TO THE PACIFIC.

CINCINNATI, Jan. 16, 1856.

*Editors Journal:*—So much has been said about the impracticability of the Gila country and the Colorado desert, for the purpose of discrediting a railroad over that route, that I have obtained the enclosed brief sketch from Maj. S. P. Heintzelman, who graduated at West Point in 1826. He is distinguished by that firmness, steadiness and prudence, method and accuracy in all things, which have pointed him out to the War Department as a gentleman to be entrusted with situations on the frontiers requiring such characteristics, so necessary for the maintenance of order and discipline, and the general well being of the service.

Such testimony as his own is reliable to the letter, and would not, perhaps, have been obtained, but for his conviction of the necessity of such a road, if for nothing else than the use of the Government, which would save large amounts of money by constructing it for the use of the service alone. By giving it a place in the *Journal*, I have no doubt but that you will be doing a service to the country. Yours,

T. WORTHINGTON.

NEWPORT BARRACKS, KY.,  
January 14, 1856.

*Dear Sir:*—In reply to your inquiries, 1st, as to the practicability of constructing a railroad from the Colorado at the mouth of the Gila to San Diego on the Pacific Ocean.

2d. As to the capacity and fitness of the bay and harbor of San Diego to accommodate the commerce to be created by the terminus of the Atlantic and Pacific Railroad at that point, &c.

3rd. As to the nature and facilities of the country as regards a railroad from the Rio Grande or Bravo to Fort Yuma, at the mouth of the Gila, I have to say:

1st. That having been stationed for near three years at San Diego and over that time at Fort Yuma, I have had a fair opportunity to observe and examine the bay of San Diego itself and the localities of the route thence to the Colorado, having many times crossed what is called the *Colorado Desert*, extending from the river of that name, to the foot of the coast range of mountains.

The contemplated road will pass for a distance of near 100 miles over this desert, which offers every possible facility for construction, so far as the road bed is concerned, there being many continuous miles over which nothing will be required in the way of grading but simple excavations into the surface for the cross-ties; by going north of Pilot Knob, (the shorter route) the sand, nowhere that I have noticed, ever drifting so as to interfere with the road bed. I had a mule path opened across the coast range over which the

mail has been carried from San Diego to Fort Yuma in 57 hours, the distance being 170 miles.

Recent surveys have demonstrated that this range may be overcome by a grade of not to exceed 107 feet (and this for but three miles) on a distance in all of not over 180 miles—the air line being between 145 and 150 miles.

As to timber, it may be had in the mountains or be brought up the Colorado, which is always navigable (for at least 90 miles above Fort Yuma) and never falls near as low as the Ohio in dry seasons. There has been a steamer running to Fort Yuma, since Dec. 1852; she then, although the season of low water, found five feet of water in the channel.

The valley of the Colorado is narrow above the Fort; below, it is seven miles wide and abounds in cotton wood, willow and musquite, the latter well adapted for fuel, but none fit for timber, unless for very temporary purposes. There is little or no difficulty in obtaining water at short intervals between the Colorado and coast range. I had wells dug and found water by digging not over 15 feet. It is generally of the most indifferent quality, but amply sufficient for railroad purposes.

A great portion of this desert is the finest soil, and susceptible of cultivation by irrigation, which can be easily effected, as the surface of the Colorado is higher than a wide strip of the plain or desert extending in a direction a little west of north over 80 miles. I visited an Indian village near the farther extremity, surrounded with extensive fields of melons, peas, beans and corn. The grass to the south of the wagon road grows luxuriantly, and the weeds are the most enormous I ever saw—reaching above the head of a man on horseback.

2d. As to the capacity of San Diego bay, and its fitness for a harbor, there is none in the world more effectually land-locked and safe in all respects. It is entered by a channel having six or seven fathoms of water, and at its entrance one-fourth of a mile wide.—This channel has a direction a little west of north, and extends gradually around to south-west, and finally almost south, with a depth for some miles of seven to five fathoms, and a width from half a mile to a mile. The length of the bay from its entrance to its southern extremity, is about 15 miles, shoaling gradually as you go up it; but, with almost everywhere sufficient water to float the largest class of Mississippi steamboats. At the new town of San Diego, four miles from the mouth, I have seen at the wharf the Pacific mail steamers and a ship of war. The tides rise from six to nine feet, and the sites for building are as favorable as the most exacting can wish.

3d. I have not crossed the country, between

the El Dorado and El Paso, but from the representations of hundreds who have, and from recent surveys, there is no great difficulty to be anticipated in the construction of a railroad between the two rivers. Water on the surface is seldom wanting for a day's journey. There are also many wooded, watered and arable valleys, on small streams, fed from the adjacent hills, but sinking below the surface in a few miles.

I have long felt certain that a railroad could, and would, some day, pass over this route and recent surveys have more than confirmed my convictions in favor of this important project, which for the benefit of this country, and the world at large, is I trust soon to be pressed forward with vigor.

As to the climate it is peculiarly healthy; on the coast the temperature is delightful; in the interior hot, with little rain, but seldom so oppressive as to make it necessary to suspend labor over a few hours, in the middle of the day.

Truly yours, etc.,

S. V. HEINTZELMAN, U. S. A.

GEN. THOS. WORTHINGTON, Cincin., O.

NOTE.—I have seen the Pacific mail steamers enter and leave the harbor of San Diego, in the densest fogs and darkest nights.

S. V. H.

## CAIRO AND FULTON RAILROAD.

This is to us of the Ohio Valley one of the most interesting unfinished roads now projected. It connects our own roads in the shortest possible direction, with the great interior west of the Mississippi, and on its completion we may look for a rapid development of that region. The following, from the *Little Rock True Democrat*, will be interesting to our readers:

We were gratified to learn from Judge Cross, who returned a few days since from south-east Missouri, the success he met with in advancing the prospects of that division of the Cairo and Fulton Railroad. He says that Butler county has transferred in due form to the company, 100,000 acres of her swamp lands; Stoddard county, 150,000 acres, and Dunklin county, 100,000 acres. Most of these lands are of the finest quality for agricultural purposes.

There is, Judge Cross informs us, hardly a doubt but that Scott and Ripley counties will each transfer a liberal quantity of their lands to the company, and if so, it will thus own and control 500,000 acres of the most valuable lands in addition to the rich donation made by Congress. Confidence in the success of the road is fixed. No one now seems to entertain a doubt on the subject. A more cheering state of things never before existed any where on the line of the road. The section running through south east Missouri is not only thus most liberally provided for, but is, in construction the cheapest. It will be remembered by our readers that the great opposition to the grant of lands in this State was made *professedly* on the ground of the *impracticability* of that part of the road in Mis-



souri. *Sunken lands and impassable swamps* figured in all the objections. The truth is now known, and is as we stated it to be at the outset. The road through south-east Missouri can be more easily and cheaply built than any other portion.

We extract the following from a letter written at Bloomfield, Mo., and received here after Judge Cross, the writer, had passed through on his return home.

"I cannot but rejoice at the great change in the prospects of this hitherto neglected and unappreciated, but interesting portion of Missouri. Having traveled through every portion of south-east Missouri, and become somewhat acquainted with most of the citizens, to many of whom I am indebted for civilities and a generous hospitality, scarcely equalled in any country, it is not strange that I should feel some interest in the favorable change in her destiny, now resting upon so liberal a basis.

At no distant period this will be regarded as one of the finest portions of the State, and surpassed by no other in wealth and prosperity. The Iron Mountain Railroad will, in its extension south, tap the Cairo and Fulton road somewhere in this country, or pass thro' it in effecting a junction. Their surveys, made in 1853, approach it within a few miles, so that in addition to immense bodies of as fertile lands as any in the world, the country will have the benefit of railroad intercourse with St. Louis, Chicago, and the upper Red river country, Texas, and indeed every portion of the Union. The extent of wet swampy lands, is greatly below what I had supposed, and will constitute no serious impediment to a dense settlement of the country.

The managing committee of the two companies, now consolidated, should have agents in the field at once, for the purpose of examining, listing, and classifying, and preparing plats of the lands on this division of the road. The whole, or at least a portion of the road, might be put under contract as soon as the selections are made and the titles perfected, on favorable terms, and without risk as to means. The large amount of valuable lands, under the control of the company, will constitute a basis of credit so secure and ample that means could be obtained at fair rates in any money market of this country or Europe. As one division of a line of road connecting productive and extensive sections of country, passing from the northern to the southern boundary of the United States, and almost straight in its direction, no one can doubt that it will be remunerative when completed, and that of itself is justly considered an element of strength and credit, in all railroad enterprises.

On yesterday, I addressed a large collection of the citizens of this county, on the subject of the road, and the policy of turning over to the company a portion of their swamp lands. They generally concur that it would be the best disposition that could be made of them, so that they get the road, and this of itself will reclaim a large portion of the country and fit it for cultivation and settlement.

In my efforts to arouse the people to bold and efficient action, I have been greatly aided by several public spirited gentlemen in south-east Missouri. To those, and many other citizens, may be attributed much more than to any effort of mine, the credit of the strong position now occupied by the company. I am assured by practical railroad men of large experience, that the land basis will insure ample means to complete the whole of this

division, and provide it with every necessary equipment for an extensive business, as well as provide adequate facilities for crossing the Mississippi river at Cairo."

#### FRENCH BROAD, AND THE SEVER R. R.— AND ITS CONNECTION WITH THE GREAT PACIFIC R. R.

SPEECH OF MR. ARMSTRONG.

Mr. Armstrong, of Knox county, Tennessee, having introduced into the Legislature of that State a bill to charter, and extend the aid of the State to the Knoxville and French Broad Railroad Co., whose object it is to connect Knoxville with the Cincinnati and Charleston Railroad, thus spoke of Knoxville and the region of East Tennessee, which we extract for the information it contains, and the eloquent manner in which he has spoken of the Great Pacific Road:

Much has been said upon this floor, Mr. A. said, about the "Pacific Railroad." He was aware that the bare mention of that enterprise might provoke a smile from certain gentlemen, but the fact must be confessed that the Pacific Railroad project was the great work of the day, which, when finished, would distinguish the present century. Early in the session he had had the honor of introducing a resolution declaring the sense of the present General Assembly as to the route that road shall take, and instructing our Senators and requesting our Representatives in Congress to contribute their aid, by inducing proper action on the part of Congress, to promote the building of the same by a route that might pass directly through our State. This resolution, he was happy to know, had passed both branches of the Legislature, perhaps without a dissenting voice. The Pacific Railway, he begged leave to say, was not chimerical—it was no "humbug." While he left Mr. Benton, Mr. Fremont, and others to direct their mighty energies to the task of proving the more northern route, by way of Independence, &c., the most practicable, he preferred, himself, to believe that the efforts of Robert J. Walker and the efficient officers of the Texas Western Railroad Company were directed in the right quarter. It had once been his fortune to pass over a portion of the route near to that surveyed by said Company, and he had ocular demonstration of the entire feasibility of building a road over a part of the southern route, if he had needed any other than the testimony of Col. A. B. Gray, U. S. Boundary Commissioner, and Engineer-in-Chief of the Texas Western and El Paso Railroad Company. He invited the attention of members to the route lately surveyed by that distinguished Engineer:—Making Memphis, on the Mississippi, the initial point, and going westward, the route would pass through Little Rock, Ark., and Fulton or Preston to Fort Chadbourne in Texas; thence, along the 32d degree of latitude, to San Diego, on the Pacific, running through El Paso on the Rio Grande, the Messilla Valley; The Gadsden Treaty Purchase, the Pecos Villages on the Rio Gila, down that stream to its mouth, crossing the Colorado, and thence across the lower part of California to San Diego, whose harbor, for safety and accessibility, was so justly celebrated. Of the country thus traversed—its susceptibility of cultivation,—its climate, free from the enervating influences of tropical heat or the congealing effects of more northern latitudes; of the road, its easy

grade—and of the general adaption of the region to the construction of a Railroad, he also referred members to the able and interesting Report of Colonel Gray. He regretted, exceedingly, the time to which he had limited himself did not allow of his speaking more fully of the location of that Great Highway and its effects; unquestionably the greatest undertaking of the age for our country, if not for the whole civilized world. It was a subject upon which he should delight to dwell, he said, but he forebore. That the road would be built it had long since ceased to be doubted, he believed; its immense importance in a commercial, social and national point of view, were alone spoken of at the present time.

Presuming gentlemen to be familiar with the geography of the country, Mr. A. went on to say, he would ask them to start with him, again, at Memphis, and trace out eastwardly the further probable route of this National thoroughfare. Leaving that flourishing city, then, the route would pass along the Memphis and Charleston Railroad to the city of Chattanooga; thence along the Chattanooga and Cleveland Road and the East Tennessee and Georgia Road to the city of Knoxville. He paused here, to say that the time was when the inquiry might have been made, where was Knoxville? He was rejoiced to say that that time had passed forever. Situated almost in the very center of the glorious confederacy, under a horizon the clearest, and in an atmosphere the purest on the continent, she sat high up on her native hills, and bade defiance to the dangerous diseases of other climes. In the midst of a country, rich in all the minerals used in the arts, and in the productions of the soil, she bid fair to be the Birmingham of the United States. Reaching out her arms of iron to Louisville, Cincinnati, Chicago and the far north-west—to Charleston, Savannah and the "sunny South"—to Washington, Philadelphia, New York, and the populous northeast—beside her connections with the "Great West" by the same means; with the noble rivers of the Holston, Clinch, French Broad and Tennessee tributary to her, she was even now, although in the very spring of her existence, one of the points marked on the map of the United States as destined to be of the first importance. The great emporium of East Tennessee—that modern Goshen flowing with all the luxuries of life—she was rapidly quadrupling her population, and he believed she would soon rival any city in the State.

It was, then, from this city, which he felt a just pride in calling his birth place, that it was proposed by the bill under consideration to extend further towards the Atlantic the route of the Great Pacific Road. Air lines, or as near to them as possible, was the admitted policy of Railroad builders. The route indicated in the bill to charter the Knoxville and French Broad Railroad Company, would be almost an air line continuation of the Pacific Road. Its direction from Knoxville would be nearly due east, through a section of country as fertile as the Delta of the Nile, and over a grade the most easy and natural. In its construction not a single tunnel, he was advised, would have to be made—no difficult excavations would have to be encountered or heavy embankments to be filled. The French Broad River, more beautiful in its scenery than the Rhine or the Hudson, as Nature's pioneer engineer, with an unerring hand, had marked a way through the mountains between Tennessee and North Carolina for its connection



with the roads of the East. Passing on from Knox through Sevier county, *via* (or near) Sevierville—a village, he begged to be indulged in remarking, than which he knew of none more lovely in the State, quietly reposing as it was in the lap of agricultural plenty, and romantically situated near the foot of the the loftiest and most fertile range of mountains in all the South—the road would intersect the Cincinnati and Charleston Road as before stated. He was gratified to know, and to be able to state, that the present Legislature had granted the aid desired by the President and friends of that Road to secure its speedy completion. Thence to Paint Rock, Mr. A. proceeded to show, the route would be continued, where a connection would be formed with the North Carolina Roads. That honored old mother of our noble State, he had been informed, had, at a recent Legislature appropriated her aid to the extent of five millions of dollars to assist her enterprising citizens in constructing the various internal improvements within her borders. Paint Rock, on the Tennessee line, was the point he understood as designated by her engineers, in a reconnaissance ordered for the purpose, where the North Carolina Central Railroad Company invited us to meet them in their march to the West. Mr. A. thought he did not underestimate the spirit of his fellow-citizens of the State when he predicted that the invitation would be cordially accepted; and he rejoiced at the prospect of the emulation he expected to see animating the two States—the liberal parent and the worthy offspring—to reach the connecting point first.

Pursuing still the route of the Pacific Road, (or Mr. A. would call it, the Atlantic and Pacific Road) he continued: Passing over the Central and a portion of the Raleigh and Gaston Road to the seaboard and Roanoke Road—the San Diego passenger, and the millions of the ever traveling human family—bearing in their trains, too, all of the numberless articles in the Cornucopia of Commerce—would reach the Atlantic at Norfolk, Va., or, diverging to the South, at Beaufort, N. C. The roar of the Pacific would scarcely have ceased in the ear of the passenger, before he would be greeted by the surf of the Atlantic, as by an echo. The tide will scarcely ebb and flow ere he has gone from one point to the other. In the same day, as it were, his cheek may be fanned by the breezes of the two oceans. This was no dream, Mr. A. said. It would be realized. Nothing else would satisfy the demands of the times. He believed he had no more enthusiasm than fell to the lot of most men, but he felt almost like hailing the Union of the Atlantic and the Pacific as an absolute certainty—their bans had been proclaimed—and he believed that we would all soon have the pleasure of congratulating the country upon a consummation so devoutly wished for. Future generations could then celebrate the union of the two oceans as the Venetians used to celebrate the marriage of their Queen City to the Adriatic.

Mr. A. proceeding, said, he had noticed some time since, perhaps in the columns of that "model newspaper," the National Intelligencer, a letter from Lieut. Maury, (he believed) acknowledged in both hemispheres to be one of the first men of the day, in which, if he was not mistaken, Norfolk, Va., was designated as the point on the Atlantic coast most eligibly situated, &c., for the great seaport city of that coast. Had Norfolk, like

New York, stretched her arms to the West at the time the latter did, it had been conjectured she would have outstripped any rival. Her harbor, he had heard, was as good, if not the best, on the coast, and the navies of the world might ride there in safety. But it was foreign to his intention, Mr. A. said, to speak of Norfolk otherwise than as one of the probable termini of the Pacific Railway. That Road once constructed to Norfolk, or to Beaufort, or to any other point, even with the start of a half a century, he would warn New York to "look to her laurels." Although the increase of the latter place in population and general importance had been almost unprecedented, yet he predicted for the Coast-City that could secure the Pacific Road, a growth far more astonishing. And, in view of the increasing agitation of the great question of Slavery, which it was to be feared would unfortunately terminate in a real *issue* sooner or later, was it not of the very first importance, Mr. A. appealed to Southern men, to the South, to secure this Road and its termini? There would not, in all probability, be two Pacific Roads for a long period, and once located in the territory of the Southern States and under their control, it would prove not only a chain of indissoluble strength to the South, but would also make the North pay tribute to her. Did it not then, Mr. A. asked, become us as true Southern men to secure, if possible, by the construction of all proper air line roads, as well as by every other means of inducement, the location of this Road on our Southern soil?

But should the Pacific Road never be built, Mr. A. said, the Road he asked to have chartered and aided would form a very important link in the chain, or net-work, of roads now being built all over the country. By turning to the South-east after passing Paint Rock, the line of travel over the Spartanburg and Union Railroad, *via* Columbia, S. C., would be thence direct to Charleston—Cincinnati, Louisville and Knoxville might thus reach that Queen City by a route direct. It would thus appear, Mr. A. hoped, to the satisfaction of those who objected to extending State aid to any Road unless it formed important connections, that the Knoxville, Sevierville and Paint Rock would connect with some of the longest and best paying Roads on the continent. He, therefore, trusted they would recognize this Road as worthy to be a recipient of the benefits of the General Improvement Acts of 1851-2, and 1853-4. By liberal legislation upon this subject, Tennessee had everything to gain. Valuable as were the lands of the counties of Sevier and Cooke, they would be rendered ten times more so, if made accessible by means of the Road under consideration; which he believed could only be done at the present time, by uniting to individual effort the policy to which he had more than once alluded.

TRADE OF NEW ORLEANS.—The exports of produce from the port of New Orleans, coastwise and to foreign ports, are very large as will be seen by the following statement of the last quarter of the year 1853, 1854 and 1855:

|           |              |
|-----------|--------------|
| 1853..... | \$14,856,033 |
| 1854..... | 19,105,255   |
| 1855..... | 27,378,788   |

This exhibit does not harmonize with several recent statements by some of our cotemporaries in relation to the rapid decline in the business of New Orleans.

[From the Louisville Journal.]

#### PACIFIC RAILROAD—SHALL IT BE MADE?—TEXAS GRANTS.

At present the mind of the public is turned with much interest toward the idea of a great Pacific Railway. The pressure of this was so great, that, three years since, Congress yielded to the public demand, and granted no less than \$150,000 for the employment of a great number of civil and military engineers, who made accurate surveys of all the practicable routes from the Mississippi to the Pacific. The result has been given to the public in several quarto volumes—full of geographical and statistical information; furnishing, in fact, almost a daguerreotype view of that vast chain of mountains and display of plains which lie between the Mississippi and the shores of the Pacific. It makes, on the whole, a great, valuable and interesting work.

The aggregate result is simply this—that of *five* routes surveyed, *three* only are really practicable; and, of these three, the route from Fulton, Ark., nearly on the parallel of 32 deg. to El Paso, on the Rio Grande, and thence to San Diego, on the Pacific, is substantially the best, because it can be *built cheapest* and can be run *easiest*.

What then did Government do? It did *nothing*. Disputes about three routes and three branches to one central route occupied the times in Congress till it was found impossible to agree on anything.

This is the condition of this most important matter, and, so far as now appears, the Government has abandoned the work. This is a lamentable result; but there seems but little probability of repairing the evil while politicians are more engaged in exciting sectional controversies than in attending to the interests of our common country. But does it follow from all this that the Pacific Railroad cannot be made? It seems to us there is yet an opening, and one which is more tempting to the enterprise of capital than any yet proposed among all our public schemes. It is known that Texas, in order to relieve herself from the commercial evils of a remote and isolated position, has offered large grants of land to railway companies. Among others, there is a grant of 16 sections (10,400 acres,) per mile to the Texas Western Company for a Pacific Road. The distance through Texas is nearly 700 miles, and the grant therefore equivalent to 7,000,000 of acres, for which (the road being made) it is estimated that *forty millions of dollars* will be a low estimate. It is well known that common lands in the centre of the State are selling at \$5 per acre, and it cannot be doubted that lands anywhere within the reach of this railway would then be worth more. If the road be made, it is *certain* the company will receive *forty millions of dollars for the work*. This is nearly double what the road will cost to El Paso, on the Rio Grande, and nearly enough to construct it to San Diego. Here being the condition of the case, it is positively certain that any company that will construct that road will receive a most *gigantic premium*.

The Texas Western Company have availed themselves of this grant so far as to secure the charter, to make a contract for construction, to set men at work, and to raise a large subscription. It is not pretended, however, that a work of such magnitude can be carried through without the sympathies and the aid of the public. To a certain extent the nation must concur. The Company very properly, therefore, appeals to the public, makes known its situation frankly, and asks the aid of new



subscribers, who, while they aid the public, will aid themselves in all probability to an extent which no public work has ever offered to the speculation of private enterprise. What stands in the way of this result? It has been asked whether Texas has lands unlocated sufficient for her railway grants; and whether the aid of Texas will *really* be given to this object? and whether the Company has *secured* these rights? These are all the points upon which it seems a practical objection can be raised. We have before us the message of the Governor of Texas, who states the amount of Texas lands held by the State to be *one hundred millions of acres*. Taken as a whole, and without railroads, this land would be worth hardly more than a dollar an acre.—But here is the Governor's estimate of it for taxation, under railroad influences:

"Suppose, for example, we take a section of country fifty miles in width, where the average value of land is now two dollars and fifty cents an acre; when this system commences, each acre of this land will pay three mills and three quarters of a mill, for this internal improvement tax, but when a railroad shall have been commenced through this section, the lands within five miles of the road will be worth at least fifteen dollars an acre, those more than five and less than ten miles from it will be worth ten dollars; those more than ten and less than fifteen miles from it will be worth six dollars, and those more than fifteen and not exceeding twenty-five miles from it will be worth three dollars an acre."

This the Governor estimates, and railway experience justifies this estimate.

Texas, then, has the lands she has offered, and as the general railroad law reserves them from sale for three miles on each side of the road, a large part of the Company's lands will be actually worth *fifteen dollars per acre*, according to the Governor's estimate. As to the aid of Texas, the sympathies of the people there are in favor of all good railroad projects. They are suffering enormous losses for the want of railroads, and will do anything within the bounds of reason, for their construction. But, the Governor of Texas goes beyond this. He recommends the *State aid*, in the way of loans to all railways, which in the end would amount to *twenty-five millions of dollars*.—Whether the Legislature accedes to this plan or not, it certainly affords sufficient proof, that the people of Texas will welcome any honest and reasonable plan to construct a railroad in that State. Why then should there be any doubt in regard to Texas grants?

It is also asked, whether the Texas Western Company have *secured* their grants? We understand that every legal step has been taken; that a contract is made for the construction of part of the road; and nothing now stands in the way of this great enterprise but the raising of capital enough to construct one hundred miles, as a practical commencement, and guarantee of its completion. With such a noble object, and such a brilliant prize in view, we can scarcely conceive of failure to obtain so comparatively small a sum; and when obtained, the road will be a *self-constructing* machine; asking no more from the moneyed world, but bringing a great excess and enormous profits to its projectors and proprietors.

The report of the Auditor of State represented the taxable property of Ohio in 1850 at \$439,000,000. The same authority gives it for the year 1855 as \$860,877,354. Doubled in five years.

#### GALVESTON AND RED RIVER R. R.

As a matter of general interest to our readers, we publish the following statistics, showing the progress and present condition of the Galveston and Red River Railroad, as furnished by one well acquainted with the facts:

1st. The grade is nearly completed from Houston to a mile beyond Cypress Creek.

2d. About 30,000 ties are now on the ground, and the contractors have ordered 10,000 from Maine.

3d. The bridges and culverts are in progress of construction, and will soon be finished.

4th. Full half of the necessary rails have either arrived or are on the way.

5th. One locomotive of 19½ tons weight, with tender, (cylinders 12 by 20 inches, and four five feet drivers, outside connection) called the Ebenezer, together with four of the cars, all the chairs and spikes, frogs, hand-cars, &c., &c., necessary for the first twenty-five miles, are either here or on the way.

6th. The road has been surveyed and leveled to the Brazos timber, near Mr. Donaho's residence, thence due north to the Navisoto, crossing that stream near the town of Anderson, passing near Boonville and the town of Springfield.

This is as far as the company have located the road. From that point it will run up towards the Red River counties, and thence diverge north-east, striking Red River near the town of Fulton, connecting with the Cairo and Fulton road, which also connects with the Central Illinois road. The stock already subscribed amounts to nearly half a million of dollars. There has been expended, up to this time, on account of grading, bridging, ties, mud sills, culverts, road crossings, lateral ditches, grubbing, &c., &c.,

|  |             |
|--|-------------|
| The sum of.....  | \$95,447 22 |
| Amount paid on account of iron, engines, cars, chairs, spikes, machinery, &c.....                            | 88,800 47   |
| Amount paid for right of way.....  | 230 00      |
| Amount paid for engineering, trustees, European agents, traveling agents, office expenses, salaries, &c..... | 20,054 69   |

Total paid out.....\$305,932 28

The survey has been paid for a distance of one hundred and fifty-four miles, in addition to which a large tract of country has been explored. Thus far the road has been prosecuted almost exclusively by the efforts of the citizens of Houston alone. Our informant says the work for grading the next twenty-five miles will be commenced on the 1st of January proximo, and that it is the intention of the company to have fifty miles in running order by the 1st of September, 1856. Heavy planters, he says, have proposed to take contracts for the grading, by sections, in payment of stock. He adds, that as soon as the first twenty-five miles are finished, negotiations abroad can be effected for money, so that the work can be prosecuted without the aid of loans from the State. We may here remark that we have also been informed by gentlemen connected with the Galveston, Houston and Henderson Railroad, that that company feel perfectly able to prosecute this road without the aid proposed to be given by the loan bill now before our Legislature, though we presume they will accept the proposed loan, if the bill becomes a law, provided the terms are not too stringent. They say that the first mortgage required by the State, will operate unfavorably on effecting additional loans.

[From the Nashville Daily Patriot.]

#### PACIFIC RAILROAD.

There is a certain measure of consistency in all great and successful enterprises—something which evinces in their management and conduct more than mere adventure and experiment. The truth of this observation is apparent in the policy marked out and steadily pursued by the "*Texas Western Railroad Company*." They have selected the route to the Pacific, which is not only the shortest but in every respect the most feasible and most practicable. With the largest amount of fertile land, it also possesses the greatest quantities of water, timber, stone, iron and coal.—Over and above all these desirable qualities, it is situated in a latitude that is well-known as the most favored region of the globe. This of itself alone, would be sufficient to commend the route to the favorable consideration of capitalists, and when in operation would more especially commend itself to the patronage of all persons to or from the Pacific. Its proximity to the tropics, suffices to avert the rigors of winter, and the height of land and the lesser relative heat of the American continent relieve it, on the other hand from a too warm summer heat. The advantages of a genial climate, can scarcely be estimated, the enjoyments it lavishes upon us, become a real happiness.

With this road in operation, the American continent, in a commercial point of view, would stand intermediate between Europe and Asia, and the commerce of two oceans and three continents, would by the fundamental laws of trade, pass and repass over this route. Time, distance and the cost of transit reduced in a most eminent degree.—For the proof of this look at any correct map of the world.

The United States Government are now paying, and have been for four years past, the Panama Railroad Company, (including the expense of the route agents in charge,) twenty-two cents per pound for transporting the mail across the isthmus, amounting to *four hundred and forty dollars per ton*, besides the large amount paid the Steamship Companies on the Atlantic and the Pacific sides. It will be recollected that the owners of this magnificent line of steamers, are also proprietors of the Panama Railroad. They are the great men of the nation, the merchant princes that control the commerce of the Western Hemisphere. They are the men who have lately bought out the Transit Company across Central America, and now, as this Company, which has heretofore held a salutary restraint over them, is merged into this gigantic compact, we may expect they will have everything their own way, and prices will rise accordingly.

We may also expect to hear of the utter impracticability of a Southern road to the Pacific, and the extreme folly of advocating any such measure until the country is settled up so as to prevent the Indians from stealing the rails of the road. This mighty compact of merchant princes not only control our commerce, but they govern the press of the eastern cities, and they form public opinion. A road across the Continent to San Diego would materially interfere with their gilded prospect, and cut short the golden harvest, which they are now enjoying. This must not be permitted, the press of the nation must be brought into requisition to vilify and traduce the company, magnify all obstacles on the route, and represent the whole coun-



try a "desert waste and howling wilderness." The only route to the Pacific is in the South, and this is all they fear, they apprehend no danger from anything above 32° north latitude, hence all their missiles are aimed at the Southern route. And the people of the Southern States have become so used to hear these vile misrepresentations, that they quietly listen and almost believe them true.

Let us consider an objection that is frequently raised by men who are honest in their motives, and speak from their own experience. They say we cannot rely upon the estimates of your engineers, for we have seen roads constructed and the cost invariably exceeded the estimates by 25 or perhaps 50 per cent.

These facts are readily admitted, and the reason is obvious. Nearly all the roads in the Eastern States, and many in the Western and Southern, have cost double what it would now cost to build a road over the same ground. The changes in grades and curves, the alterations in width of rails and size of cars, the increase from time to time of motive power, and various experimental operations have all required expenditures unexpected, and wholly unprovided for. The right of way and land damages, have also been a heavy item of expense, and a fruitful source of litigation, and ill-feeling. The Texas Western Railroad would not be subject to these unnecessary expenditures, for the State grants the right of way 200 feet wide, and all necessary lands for building purposes, in addition to the 10, 240 acres to the mile, and the knowledge derived from the experience of others will be of vast service to them. It will enable them to guard against all those extravagant mistakes which pioneers in railroad construction have made and place their work at once among the best works of the country upon the original outlay.

#### TURKEY—ITS DEVELOPMENT by RAILROADS

One of the greatest benefits to result to Turkey from its alliance with the Western Powers, and one which will far outshadow in importance their armed interference in her behalf, is the development of her territory by railroads. While nearly all Europe besides has been advancing with giant strides in civilization, Turkey—decayed and benighted Turkey—has been worse than standing still; she has retrograded rather than advanced in the social scale, and this, one of the finest regions of the globe, through misrule and false religion has lost even the remnants of the ancient civilization that once lingered there.—The following, which was translated from the French for the Philadelphia *Inquirer*, gives reason to hope that a brighter day in yet in store for that beautiful, but unfortunate country:

The most active element of civilization for Turkey, will unquestionably be the establishment of a net work of railroads, which shall connect the principal political and commercial centres of the empire, and substitute the movement and activity which are the chief characteristic of our epoch, for the immobility that has for centuries weighed upon these beautiful regions.

The Ottoman government has at last understood it, and without dreading the opposition of fanaticism, and the passive resistance

of routine, the Sultan has announced the intention of borrowing from the Occident those rapid means of communication and locomotion, which, under the name of railroads and the electric telegraph, have created, multiplied and rendered accessible to all the wonders of civilization. The government of the Sultan has done still more. It has addressed an appeal to the capital and the ideas of the Occident, and offered them a serious support and a generous welcome.

This appeal has been heard. Ottoman credit begins to be established in the principal commercial marts of Europe. On the other hand, learned engineers, experienced contractors, all versed in the direction of public works, have offered their co-operation to the Sultan, who has accepted it. The work has already begun; it is advancing at certain points, while the elaboration of the plans in their ensemble, are being completed.

The following indications with regard to these plans, which are not entirely perfected, is derived from an authentic source.

The principal line of railroad will undoubtedly be that which, starting from Constantinople, will be directed to Belgrade by way of Adrianople, Philippoli and Sophia. By means of it the capital of the Ottoman empire will be placed in immediate and daily contact with the other capitals of the great European States, beginning with Vienna and ending with London.

Constantinople is without doubt the central point of the Ottoman empire. Yet the Turkish administration, far less centralized than those of the other European powers, has allowed important centres of business to be established in other parts of the empire, whose interests also demand the establishment of railroads. We will mention only two, one in Europe, Salonica; the other in Asia, Smyrna. A railroad which starting from Salonica should traverse Albania to terminate at a point of the Gulf of Otranto, which might be for Avlone, for instance, would protect this part of the Sultan's States against Greek brigandage and attempts at insurrection more effectually than an expensive army. It would connect the commerce of Roumelia with that of the Adriatic, which, under the impulse of the Austrian Lloyds, is assuming more and more importance. As, on the other hand, a branch of the railroad from Constantinople to Belgrade would be directed to Salonica, the result would be that the distance from Trieste to Constantinople would be reduced by several days, and commerce between these two ports freed from the trammels, dangers and tediousness of the navigation of the Archipelago. What would be true of Trieste, would be still more true of the ports of Italy.

In Asiatic Turkey, it is Smyrna which, at first, strikes our eyes. This city is the geographical centre of the arc which embraces the Bosphorus, the Hellespont, Athens, Cape Matopan, Crete, and Rhodes. It is to this situation that Smyrna has owed the antiquity of its importance, increased still more in our day by the excellence of its port. Besides, Smyrna is the maritime outlet to all the Asiatic commerce which is carried on by land. It is to the West of Asia, what Canton is to the East. Smyrna owes to its maritime and continental relations a population of 200,000 inhabitants. It is certain that if a network of railroads is, at a period more or less near, to be established in Asiatic Turkey, it will converge towards Smyrna. Even now, a line from Smyrna to Broussa, bringing the com-

mercial metropolis of Asiatic Turkey nearer to Constantinople, would be an enterprise eminently useful. As to other lines which would radiate from Smyrna towards the South and East, we must wait, before speaking of them, until the first lines indicated above are established and have proved, by their free and fruitful working, that the population of these countries can appropriate to themselves Western ideas and practices. It is an experiment to be tried and our most lively desire is that it may succeed, for the interminable Eastern question can be definitely solved only on this condition.

#### IRON RAILWAY BRIDGES.

There are few problems the correct solution of which is more important than those which relate to the determination of the strength of the materials used in the constructing of railroad bridges. There is so much life or property frequently dependent for their security on the strength of these bridges, that every precaution which the deductions of scientific investigations or the lessons of experience suggest as improvements, ought to be carefully considered and promptly adopted, if approved. An impression very generally prevails that iron bridges are safer than those built of wood. It is very natural that this opinion should prevail, but it is not always true that iron is preferable to wood for bridges—to be so, the iron must be used judiciously. Very many suspension bridges fail after being in use some time, the cause of which seems involved in mystery; for, as there is but little decay in iron, structures built of this material ought to endure for a great length of time. There is no apparent reason why an iron suspension bridge should not, with a given weight passing over it, endure for a century. Yet they never do. The weight such a bridge bore yesterday, it ought to bear up fifty years hence. But it will not do so. It becomes, then, an interesting inquiry to ascertain the causes of this failure. It is accounted for thus: The fibrous or laminated state of wrought iron is supposed not to be its natural condition, but that its natural form is that of the crystalline, which latter form it will assume when subjected for a long time to any great strain or external force. Thus it has been found that cast-iron car-wheels have passed from the fibrous to the crystalline state, and the same thing has occurred with the chains of suspension bridges. This is a philosophical fact that civil engineers ought profoundly to consider and carefully weigh when planning a suspension bridge for railway use.

In this connection the following extract from a communication made to the London *Times* by Mr. Henry Noad, author of several chemical works on the failure of the Nasmyth gun, is matter of interest. Mr. Noad's remarks have an important bearing upon the safety of iron bridges:

My attention has lately been drawn to this subject, and while on a visit last week to an iron work in Wales, I made the following experiment. Seeing a large quantity of iron chain lying about, and learning that, though scarcely worn, it has been laid aside in consequence of the breaking of some of the links, I examined several from different parts of the chain. I found that a single smart blow with a hammer was sufficient to snap the metal, the fracture of which was crystalline, and its brittleness such, that it could, without difficulty, be broken into small pieces



under the hammer. I now heated strongly in a forge some of the broken links, and allowed them to cool very slowly underneath a bed of fine sand. After the lapse of twenty-four hours they were examined; the metal was found to have recovered its tenacity, it could no longer be broken to pieces under the hammer, and when at length, after repeated heavy blows, it did partially yield, the texture of the metal was found to be perfectly fibrous—every trace of a crystalline structure had disappeared. This fact proved that the metal was good, and there can be little doubt that the crystalline texture of the unheated links had been produced gradually by the mechanical action (vibration) to which the chain had been subjected during its use.

Now in the case of Nasmyth's monster gun, the brittleness of the metal has been occasioned, not probably so much from its having been kept for a long time in an "incandescent and soft state," as from its having, while in that condition, been subjected to violent and long-continued hammering. I would suggest, therefore, as an experiment well worth trying, that the gun should, after it is finished, be submitted to a careful annealing process, viz.: that it should be exposed to a very high temperature, and then allowed to cool as slowly as possible; by this I anticipate that the fibrous texture of the metal would be restored, and its tenacity consequently regained. I need scarcely point out the application of the above remarks to the probably condition of metal in wrought iron bridges. The iron must, of course, have been subjected to violent percussions during the erection of the bridge, and every locomotive, with its long rattling line of carriages, that subsequently passes over it, must contribute a certain share in the induction of a crystalline state among the particles of the metal, and I cannot see how the inference is to be avoided, that by such an arrangement of molecules the strength of the fabric must be gradually deteriorated. The very great, the national importance of these views, should they prove to be correct, is my excuse for endeavoring to give them publicity through the medium of the *Times* newspaper.

It is estimated by the Hon. Mr. McDougal, of South Carolina, that in 1853 there arrived at San Francisco \$100,000,000 worth of merchandise at an aggregate cost for freights and insurance of \$28,666,000. That the passenger travel amounted to \$36,300,000, and government transportation \$3,739,000, making an aggregate of over \$70,000,000 for expenses of traveling, merchandise and stores from the Atlantic to the Pacific States. This would have been done on a Pacific Railroad at less than one-third the cost.

### SOUTHERN PACIFIC,

OR,

Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as installments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING,

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,

Publishers and Proprietors.

167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, FEBRUARY 25, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, ..... MONDAY, FEB. 25.

#### EFFECT OF THE SOUTHERN PACIFIC RAILROAD ON THE OPENING OF SILVER MINES—IMMENSE MINES OF THE GILA—COLORADO, AND THE GULF OF CALIFORNIA.

It is a definite and known fact, that no equal region of the earth is more abundant in Silver Mines than the Mexican Province of Sonora—which borders, for a long distance, on the intended route of the Southern Pacific Railroad. The whole region, between the Gila and the Gulf of California, is filled with mineral resources.

For years before the discovery of gold mines of California, a British man-of-war annually visited the gulf of California and quietly took away a million or two of dollars, in the precious metals. Other sums, in immense quantities, have been smuggled away, in each year. Hence, it is that the statistics of Mexico do not, and cannot show the amount and value of the Silver Mines of Mexico.

A report made to the Mexican Government, on the mineral riches of Sonora, says, "Among the five and twenty States, and territories, that compose the Mexican Confederation, there is no other which contains in its respective territory the like wonderful mineral riches, which abound in the State of which we treat.

"In fact, many metals of universal estimation, such as gold, silver, mercury, copper and iron, in a pure state, in grains, in masses, or in dust, as well as mixed with other metals superficially, or in veins, are found in the extensive territory of Sonora.

"As already said, the whole of Sonora is mineral; but, as among us we only give the name to those places, in this State, in which there have been discovered, and worked a conjunction of veins, it results that the places, in this State, to which for this cause has been given the name of mineral, are *thirty-four*."

The Report then proceeds, the condition of these, and other mines. It appears that the leading causes why these vast mineral resources are threefold:

*First*—The want of laborers and skill.

*Secondly*—The want of security to person and property.

*Thirdly*—The want of communication with the interior. Now, it is very obvious that the Southern Pacific Road, passing the mouth of the Gila would supply all these.

According to the Mexican *Mineral Reports* the principal mines lie northwest of Guaymas; and, therefore, between the Gulf of California and the Gila. The Pacific Railroad, therefore, cannot be more than from 100 to 200 miles, from the very center of the Silver mining districts. The road would, therefore, furnish ample and rapid communication between the Valley of the Mississippi and the Silver Mining District of North America—the mines of Sonora. The effect of such a road would be to fill the whole country with the hardy laborers of the United States. *Security* they would have readily, in two ways,—first, by their own established courts, as in the early stages of California; and, secondly, by treaty stipulations, to be made between the United States and Mexico.

The Southern Pacific Railroad would furnish, therefore, to these greatest of Silver Mines, all that they require—laborers, security and communications.

On this subject we make the following extracts, from the very interesting work on "MEXICO AND ITS RELIGION," by R. A. Wilson:

"Chihuahua and Sonora are the States or Departments to be affected by our Pacific Railroad. Sonora is the most valuable of the two, not only on account of its inexhaustible supply of silver, but also on account of its delightful climate and agricultural resources. It is like the land of the blessed in Oriental story. California does not surpass it in fertility or in climate. With industry and thrift, it could sustain a population equal to that of all Mexico. The table lands and the valleys are so near together that the products of all climates flourish almost side by side."

The mountain chain, which traverses California, under the name of the *Sierra Nevada* appears to be only a continuation or re-appearance of the mountain chain here called *Serra Madre* (Mother Range)—which forms the boundary between the departments of Sonora and Chihuahua:

"On the western declivity of this mountain range, the most remarkable illustration of this fact of cropping out is found at Batopilos, already mentioned. This town is in a deep ravine. The climate is, like that of the California gulches, intensely hot, but remarkably healthy. Here the *lodes* of silver ore are almost innumerable, with crests elevated above the ground. The mine of *El Carmen*, in the times of the vice-kings, produced so immensely that its proprietor was ennobled, with the title of Marquis of Bustamante. This was the beginning of the family of Bustamante. A piece of pure silver was found here weighing four hundred and twenty-five pounds."

Mr. Wilson adds:

"Such is Sonora, a region of country

which combines the rare attractions of the richest silver mines in the world, lying in the midst of the finest agricultural districts, and where the climate is as attractive as its mineral riches. But its richest mineral district is near its northern frontier, and is almost inaccessible, and can never be advantageously worked without an abundant supply of mineral coal for smelting; nor can any of its mines or estates be successfully worked without greater security for life and property than at present exists. The capitalists of Mexico will not invest their means in developing the resources of Sonora, and in consequence, the finest country in the world is fast receding to a state of nature. I found in the Palace at Mexico a copy of the last report of the Governor of Sonora upon the state of his Department, in which he mentions, among many other causes of its decadence during the last few years, the extensive emigration of its laboring population to California."

Mr. Wilson concludes with the following striking remarks on the effects of a Railroad through El Paso:

"The long experience of Spain taught her that a western route to the East Indies was so much superior to the one by the Cape of Good Hope as to compensate for a transshipment of all her East India merchandise upon mules' backs from Acapulco to Vera Cruz. Much more advantageous must it be to us, when a railroad from El Paso, passing through the midst of the silver district I have described, shall transfer our commerce with Japan and China to the Pacific side of our continent. Here the very silver necessary for the purchase of tea is nearly as abundant as tin in some of the European mines, and, as in California, the prospects held out to the farmer are equal to mineral attractions."

#### MONEY, CURRENCY AND FINANCE OF THE UNITED STATES.

Should peace, as is anticipated, be made in Europe—a new era will open in the commerce and enterprise of the United States—not on account of any direct change, in the commercial transactions of Europe and America: but, in the relief given to the source of credit, by the removal of the war drain. In that event the current of investments, in American Securities, will resume its course, and all good railroad securities, will find a ready market. Peace, however, is not *certainly* re-established; and, in the meantime, it will be well to consider the present condition of the Money, Currency and Commerce of the United States. In the *Record*, for March 3d, 1853, we gave a summary of the *Coin Currency and Active Money* of the United States, for January of that year. We shall now resume the statement, and complete it to January 1856.

Commencing in 1836 on a basis of the



Treasury statement then made we have the following results, viz:

|   |               |
|---|---------------|
| Coin in the United States (1856).....                             | \$73,000,000  |
| American Gold received to 1853.....                               | \$149,182,435 |
| Aggregate.....  | \$222,182,435 |
| Deduct excess of imports.....                                     | 18,500,900    |
| Total Coin January 1853.....                                      | \$203,682,435 |
| California Gold received in the United States since.....          | \$151,000,000 |
| Aggregate.....  | \$354,682,435 |
| Excess of Exports of Specie and Bullion in 1853, '54 and '54..... | \$ 91,800,000 |

Coin and Bullion in the United States, January 1856.....\$263,182,435

As the Tables of U. S. Commerce do not correspond with the end of the year, it is possible there may be a variation of two or three millions in the above aggregate; but not more, we should think.

It follows, from this statement, that there is now in the United States, an amount of coin and Bullion, not materially different from *two hundred and sixty millions of dollars*.

In January, 1853, there was as we see above *two hundred and three millions*; so that we have *gained*, in the three years past, near *sixty millions in specie*.

Let us now examine the money of *active circulation*.

In January 1853, the statement was as follows:

|  |               |
|--|---------------|
| Coin and Bullion, (above).....                         | \$203,682,435 |
| Bank Notes in circulation.....                         | \$153,958,358 |
| Aggregate of Coin and Notes.....                       | \$357,640,793 |
| Deduct Coin in Bank vaults and U. S. Sub-Treasury..... | \$ 63,483,536 |
| Money in Circulation.....                              | \$294,157,257 |

A portion of the Bank notes were of course held by the Banks, but, as they were continually deposited and drawn out, they make a part of the money of circulation.

In January, 1856, the circulating notes of banks amounted to \$177,157,412, according to a statement in *Bicknell's Reporter*, and the coin in the United States Sub-Treasury to \$21,000,000, and that in the Banks to \$60,072,830.

The amount of money now, either in circulation, or, in the hands of the people, is as follows:

|  |               |
|--|---------------|
| Coin and Bullion, as above stated.....                     | \$263,182,435 |
| Bank Notes.....  | \$177,157,412 |
| Aggregate.....   | \$440,339,847 |
| Deduct coin held by Banks and Sub-Treasury, Jan. 1856..... | \$ 81,072,830 |

Money in circulation.....\$359,267,017

Money in circulation Jan. 1853.....\$294,157,257

Increase.....\$ 64,809,760

Then we have the incontrovertible fact, that, in three years, the *money of commerce* in the United States, has increased full *sixty millions*.

This may seem incredible to some, who reflect that in the last three years money has been in much greater demand and railroad enterprises have been in a good measure arrested. But it is easy to see, why this increase of money is perfectly consistent with the state of things we have seen.

First, we may observe that nearly all branches of business have been in an extremely prosperous condition. This is especially the case with farming and banking.—The price of produce has been very high, and the dividends paid on most Bank Stock enormous. The same remark may be made of the importing and navigating interests.

Secondly, Railroads have been arrested from two causes; one, because they are largely built on European *credit*, and the other, because the capital engaged in them had, for the time being, become *disproportionate*.

Thirdly, The *high rates* of interest paid for money is not so much a consequence of the demand for money, as it is of the *encouragement given to usury*, by the relaxation of the laws against it in most of the States. The effect of allowing 10 per cent., instead of 6, as the contract rates of interest in Ohio, has been to make the *current* rate 10 per cent., and if the law were to allow 12 per cent., the same result would follow. Heretofore, the law has in most countries operated as a sort of dyke against enormous usury. The present doctrine is, that money should be as free as the sale of potatoes! The effect of this sagacious doctrine is, that the rate of interest in the United States has been continually increasing, just in proportion as the law against usury has been relaxed.

Thus, we see there are sufficient reasons for the state of things in the last two years, without resorting to the increase or diminution of money at all. Another thing we should observe in reference to the use of money. The increase of interest is almost the same as diminishing the capital. By making it cost more; less of it, in the form of money, can be profitably used.

Let us now see the amount of *active circulation* per individual. In the *Record* of March, 1853, we furnished the active circulation of the United States, with the authority for it for the past forty years. We repeat it here with the addition of 1856:

| Years. | Population. | Money in Circulation. | Per Head. | Authority.  |
|--------|-------------|-----------------------|-----------|-------------|
| 1811   | 7,500,000   | \$ 43,000,000         | \$ 6 00   | Gallatin.   |
| 1816   | 8,600,000   | 95,000,000            | 11 00     | Crawford.   |
| 1830   | 12,866,930  | 70,000,000            | 5 50      | Gallatin.   |
| 1836   | 15,366,900  | 148,000,000           | 11 00     | Treasury.   |
| 1853   | 25,000,000  | 295,457,257           | 12 00     | R.R. Record |
| 1856   | 27,000,000  | 359,267,017           | 13 30     | R.R. Record |

In 1816, 1836 and 1853 were extraordinary inflations of trade. The result is seen in the rapid increase of currency.

In order to show the proportion of *coin to paper* held at different periods, (in circulation,) we present the following table, premising that from the *gross* amount of coin and bullion, is deducted the amount of coin held by the banks and sub-treasury, thus showing the amount of each, in circulation:

| Years. | Bank Notes.   | Coin.        | Population. |
|--------|---------------|--------------|-------------|
| 1816   | \$ 87,500,000 | \$ 7,500,000 | 11½ to 1    |
| 1830   | 60,000,000    | 10,000,000   | 6 to 1      |
| 1836   | 120,000,000   | 28,000,000   | 4½ to 1     |
| 1853   | 153,958,358   | 141,498,899  | 1 1-10 to 1 |
| 1856   | 177,157,412   | 182,109,605  | 39-40 to 1  |

We see here in these figures a great and surprising financial revolution, which will explain the commercial activity of the United States, and the speculative turn which business takes, quite as well as the new lands and industry of the people explain the increase of positive capital. To the figures:

|   |                                |
|---|--------------------------------|
| Currency in 1826.....                           | \$168,000,000                  |
| Currency in 1856.....                           | 359,000,000                    |
| Increase.....                                   | \$191,000,000 or 112 per cent. |
| Coin to Paper in 1836 .....                     | 1 to 4                         |
| Coin to Paper in 1856.....                      | 1 to 39-40                     |
| Increase of Coin over Paper, over 300 per cent. |                                |

We have reached now the extraordinary position of a people with *thirteen hundred banks* of circulation, having *more coin than paper in circulation*, or rather *in the hands of the people*.

#### R. R. LEGISLATION--FENCING.

Railroads are decidedly a modern institution, belonging more especially to the last ten years. They have grown in the short period of their existence into a mighty interest which has a close connection with every varied employment or relation of life. There is not a business but is in some degree greater or less dependent on them. The farmer, the mechanic and the merchant alike depend on them to render their wares of value, or to supply them the means of conducting their business. Socially, railroads are pre-eminently a *domestic* institution. If they are not social ties and family bonds, they at least are the great means of preventing these bonds from being wholly disrupted, and families from becoming strangers to each other. In short, railroads are now as indispensable to the world, to its business and its pleasures, as food to the hungry or medicine to the sick. It is then strange that legislation, when applied to these great means of commerce and social intercourse, should savor of the oppression of past generations, and resemble rather the enactments necessary to restrain a monster monopoly than the salutary measures which encourage a public blessing. We do not ask of legislators that they should abate one iota in the system of legislation necessary to secure the right direction and the honest employment of the capital invested in these enterprises. On the contrary, we would be glad to see these legislative safeguards doubled, and defalcation and dishonesty rendered, as far as may be, an utter impossibility. But we do ask that legislators should feel it a duty to enact as wise and liberal measures towards the railroad interest as to other interests. And that where these interests clash, the railroad should at least have a fair chance.

By the report of the Auditor of State, we learn that the taxable property of Ohio in 1855 amounted to \$860,877,354. In 1850, by the same authority, it was given at \$439,000,000. Is it to natural increase alone that this immense gain in valuation is to be



attributed. Would natural increase alone in five years double the value of our property? Is the immigration to our borders sufficient to account for this? Would either of these causes, or both combined, raise the cash value of farm property from ten to twenty and thirty dollars per acre? Or is this increase to be attributed to the increasing means for rapid and easy communication, to the opening of new channels for the flow of commerce, and new markets for the products of the farm? And when the interests of these means of communication, in many instances built without one cent of cost to the parties mostly benefitted, clash with those of the agriculturists on their lines, with those whose property and yearly products are receiving this immense gain from their agency, should legislators always treat them as though they were a public curse and detriment, or should they sometimes remember the benefits they have conferred, and place them upon an equal footing with the other interests, which it is their duty to protect. The farmer owns a piece of land valued at ten dollars per acre. His wheat is worth from 60 to 80 cents per bushel—his other crops in proportion. Some crops he cannot cultivate, because when cultivated they will not bear wagon transportation to market. A company of strangers build a railroad past his property. They pay him liberally for the land they take, and the moment the locomotive first passes his farm, he can sell it for twenty or thirty dollars per acre, and his wheat for \$1 25 to \$1 35 per bushel. His other crops in like ratio, and the crops he could not cultivate with profit before, he can now raise and send fresh to market. And yet this man, so largely benefitted at the expense of others, and shielded by antiquated legislation, will not spend a single dollar to make or repair a fence to confine his own cattle, and prevent their endangering the lives of hundreds of travelers; and what is far worse, will even too often afford facilities for his worthless animals to be destroyed themselves and destroy human lives. These are not idle fancies—they are notorious truths and as such we claim for them the attention of our legislators. That same farmer, had he sold a portion of his possessions to another agriculturist, to compete with him in supplying the market, would willingly have built and maintained half the fences on the dividing line, and the whole fence on the lane which leads to his neighbor's house. He considers it just to encourage a competing agriculturist, and bear equally with him the burden; but he will not move one step to countenance a means of conveyance that annually doubles his income.

Such is the narrow policy of the agriculturist, and such, we are sorry to say, has been the policy of our legislators. But we hope that with increasing light, with the con-

viction, every year more apparent, that railroads, so far from injuring the farmer, are his greatest friends, a brighter day will dawn on legislation, sounder and more liberal views be adopted, and railroad interests placed as of right they should be, on an equal footing with the other great interests of the State.

#### ON THE PACIFIC RAILROAD.

NEAR THE 32D PARALLEL OF NORTH LATITUDE IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

NO. 1.

Although California has been in the possession of the United States for more than eight years, and although observations and surveys previous to those recently published by order of Congress, had been made, only a probable opinion could be formed, and by none but those who had carefully examined the various items of information on the subject which had from time to time reached the public. Opinions highly probable might on these data be founded, by men of sagacity and suitable talent; but a decisive opinion could not be formed, until examinations by persons qualified by education and character, should establish the facts by instrumental surveys, in relation to each route. These we now have in the reports accompanying the Secretary of War's Report to Congress, of February last. The Secretary's Report is a most able summary of the facts in those reports, and of conclusions drawn from them by him. The examination of those reports by Capt. A. A. Humphreys, made by order of the Secretary, is also one of the documents, and fully entitled to the high commendation bestowed upon it by the Secretary. The whole of these documents taken together—although some particular views may not be regarded as entirely correct—constitute upon the subject generally conclusive proof from which there is no reasonable appeal. The investigations have been laborious and long continued, by men with the proper instruments to ascertain facts—men scientifically trained by government in all the knowledge bearing upon the objects of their examination, men in disinterested positions, whose reputation is involved in the accuracy of their statements and descriptions.

The subject is one in which the whole people of the United States are interested; for it is a question about a route for a railway over their own soil, that will introduce one of those great revolutions in commerce, which, in the lapse of time, have been successively established by increased knowledge of the Globe. But this last route is surrounded by circumstances which strongly argue, that when once fixed, it will endure as long as the world itself shall stand.

The state of human knowledge and the concurrence of events appear eminently auspicious to this undertaking. Providence seems manifestly to be preparing the world for greater intellectual and moral changes of value and interest than have ever before been witnessed. Franklin drew lightning from the clouds, and put men upon the track of making new discoveries in a deeply interesting branch of science, and Morse, his equal in philosophic acumen, has sent the lightning to discourse with men over the breadth of any continent. Science is advancing to its utmost possibility of application, and the means of concert of mind with mind seem to be approaching the highest practicable improve-

ment. The command to "replenish the earth and subdue it," has heretofore been very imperfectly obeyed. In the language of the British Review of 1854,\* with respect to Governmental power: "The grand problems are, how to level the mountains and to drain the sea; or if we must leave the Alps to be the throne of the thunder, and suffer the Zuyder-Zee to roll its sullen waves over its incorrigible shallows, yet to tunnel the mountain and pass the sea with a rapidity which makes us regardless of the interposition of obstacles that once stopped the march of armies and made the impregnable fortress of kingdoms. But the still severer trials of human intelligence are, how to clothe, feed, educate, and discipline the millions which every passing year pours into the world. The mind may well be bewildered with a prospect so vast, so vivid, and yet so perplexing." But we must not shrink from our responsibilities, but endeavor faithfully and judiciously to fulfill them.

We propose to consider the subject indicated by the heading of this article in successive numbers, by exhibiting the general superiority of the route near the thirty-second parallel, from Fulton, in Arkansas, to San Diego, or San Pedro and San Francisco, in California; the new light, which has been obtained by the recent surveys, and the profits of an investment of capital in this undertaking to the owners of the stock, whether state, national or individual, and the advantages to the nation generally. We will close by discussing the constitutional question, and a recapitulation. We will take up these points in the order in which we have named them. And, first, with respect to the general superiority of this route, we cannot make a better proof of it, within equal limits, than that which is supplied by Captain A. A. Humphreys in his examinations, who has so deservedly received a high tribute of commendation from the Secretary of War for his scientific attainments, and accuracy of research: and by Col. A. B. Gray, in his report of February, 1855, on the Atlantic and Pacific Railway. Mr. Gray is a gentleman of eminent talent in his profession, and for many of the facts of which he speaks, the writer of this article has other testimony which he knows to be reliable, and which fully corroborate that of Mr. Gray. Mr. Gray is the engineer of the Texas Western Railroad; he "crossed the desert of California four times at different seasons, winter, summer, and fall, and explored, instrumentally, most of the country, from the desert into San Diego." In a subsequent number, a consideration of particular difficulties, extremely exaggerated, with respect to water, &c., will be particularly the subject; and the whole question reviewed in not less than five numbers of moderate length. We will now make some extracts from Captain Humphreys' examination, and conclude this number with some remarks upon his statement, and upon Capt. Pope's report. For greater distinctness, we will divide these extracts into sections, with heads expressive of the subjects they contain.

Captain Humphreys' report:

#### GENERAL FEATURES IN FAVOR OF THE THIRTY-SECOND PARALLEL.

\* Among the general considerations which determine the position of the route near the thirty-second parallel, the most prominent are the low elevation of the mountain passes, and their favorable topographical features, as

\*Blackwood.



well as those of the table lands, embracing over 1000 miles of the route; the favorable character of the surface generally, by which the most costly item of construction in railroads—the formation of the road bed—is, in a great measure, avoided; the shortness of the line—1600 miles, from the navigable waters of the Mississippi to the Pacific—and the temperate climate on the elevated portions in that southern latitude.

#### CHARACTERISTICS—ELEVATION—RIVERS.

The principal characteristics of this route is the great extent of high and smooth and nearly horizontal table lands which it traverses, reaching an elevation of 4000 feet upon the dividing ridge between the Brazos and Colorado rivers of Texas, near which elevation it continues until it descends from the pass of Sierra de Santa Catarina to the Gila river, a space of nearly 600 miles.

From the eastern edge of the Llano Estacado to the pass of San Geronio, 1052 miles, the route crosses three rivers: the Pecos, the Rio Grande, and the great Colorado of the West.

#### THE PREPARATION OF THE ROAD—THE BED.

Throughout the distance of the 1052 miles, with few and limited exceptions, this preparation is already made by nature, and quite as perfectly as, if not better, than it could be done by the hand of man. This item alone usually amounts to from one-half to two-thirds, and sometimes three fourths, of the whole cost of a railroad.

#### SUPPLIES OF WATER.

The mode and probable cost of obtaining supplies of water over these dry regions have been pointed out, and will be subjected to practical tests. Even if these should fail (of which there is no probability) in bringing the required supplies to the surface, the permanent streams and large springs already existing are at distances sufficiently near for the purposes of a railroad, special arrangements having been made to meet the difficulty.

For a twenty ton engine, on four drawers, wood and water, if carried with the train, weigh about one eighty-fourth of the maximum load on a level, and for one hundred miles one twenty-second part. With coal and water the proportions are: for twenty-five and one hundred miles, one one-hundred and fifth and one twenty-sixth; but as the load usually carried on freight and passenger trains is much below the maximum, we may safely assume that the trains (freight and passengers) can carry fuel and water sufficient for one hundred miles over grades not exceeding thirty or forty feet without additional cost, the maximum load of this engine on grades of forty feet, in the best condition of rail, being two hundred and fifty-two tons, and in the worst condition one hundred and eighty tons.

That required for the use of the working parties can be hauled without seriously enhancing the cost of the road; for it must be remembered that the working parties will be small over those portions of the route where the road-bed has been already prepared by nature. We have seen, too, that fuel for culinary purposes for the working parties, will probably be found over the greater part of these regions, and where it cannot be found conveniently, that it can be supplied from points so near to the work that its cost will not exceed double that of fuel for the same purposes in the Eastern States.

#### GENERAL ADVANTAGES OF THE ROUTE.

The mineral wealth of the countries near the 32d parallel has been indicated by others, and needs no other mention.

The proposed road passes near the northern borders of the Mexican States, or departments of Chihuahua and Sonora. They extend northward from latitude 27 or 28 degrees, to our boundary. The surface is generally table lands affording good grazing; the climate is agreeable. The soil of the river valleys is fertile, capable of producing, when irrigated, wheat, cotton, &c. Their wealth is principally in cattle and farms, and mines of gold and silver. The area is 28,000 square miles. The population exceeds 300,000.

Although this route passes near the frontier of Mexico, yet it is not liable to objection from this circumstance, since we control the frontier, and the construction of the road would probably break the power of the Indian tribes.

It passes through or near territories having already large populations; that of New Mexico, according to the report of Captain Pope being 50,000, and that of the Chihuahua and Sonora, as above stated, being more than 300,000.

The chief advantage of this route is, that for the space of 1100 or 1200 miles, the usual item of great expense in railroads is in a great measure avoided, there being no necessity to prepare an expensive road-bed, except in a few instances in the passage of the mountain chains. Draining and ballasting are also dispensed with at the same time. Over the remaining portion of the route—418 miles of it to San Pedro, and 839 miles of it to San Francisco—the ground is generally favorable to the construction of the road-bed.

This terminates the extracts in this number from Capt. Humphrey's examination. We now append some extracts from Captain Pope's report, all of which it will easily be seen fully sustains Captain Humphrey's statements; and with respect to water, show an abundant supply for railroad purposes after the road has been constructed with even more emphasis than he has thought proper to use on that subject. No one will for a moment raise a question about the Valley of the Trinity and the Brazos. In all respects they are admirable for a railroad. We pass over this part of Captain Pope's report wholly and abridge the rest without marking the particular omissions. PAGE 37, VALLEY OF THE COLORADO OF TEXAS.

The soil of the Valley of the Colorado is good, but less moist and fertile than that of the Brazos. The rain is not so abundant over the valleys of the streams to the East, but falls in sufficient quantity to obviate the necessity of irrigation, as was sufficiently evinced in the fact that although we traversed it at the very driest season of the year, most of the small tributaries of the river were running streams, and few were without water. The Colorado itself was about forty feet wide, and with a rapid current traversed its valley from side to side in a very tortuous course.

Limestone and other building material, with the exception of timber large enough for joists and planing, are readily obtained at any point of the Valley; and its agricultural features, although not so favorable as those of the country to the East, are nevertheless good.

The mezquite, a hard and durable wood,

grows in extensive forests, is about thirty feet high, and from four to ten inches in diameter.

For fuel, or for ties for railroad, it is eminently adapted.

Captain Taplin (p. 98 of Captain Pope's report) giving an account of his passage of the "Stained Plain," which terminated on the East at the Sulphur Springs of the Colorado, says, "They issue out from under a bed of limestone rocks. About a hundred yards before the head spring there is a large pond, at which animals can be watered with the greatest facility."

He estimates the distance from the Pecos to these springs at 130 miles, but it was found by actual measurement to be 125 miles.

Page 102 of Captain Pope's report, Mr. Byrne, assistant computer, says in his journal, April 3d, 1854, "The Sulphur Springs of the Colorado, five in number, issue from one side of a ravine, the water of one spring tinged slightly with sulphur; the remainder contain pure and fresh water, which holds a small portion of lime in solution. Below the springs there is a large pond, where animals can be watered with much ease." From all the facts stated, we are justified in computing the supply per minute of these springs to be 80 gallons, consequently the hourly supply would be 4800 gallons, and the daily supply 115,200 gallons. This spring is on the eastern verge of the Llano Estacado.

On the Western side of that plain runs the famous Pecos River, whose "valley is from two to four miles in width, and is bordered on the East by the Llano Estacado. The bottom lands are level and very fertile." This account is in the words of Captain Pope, (page 3 of his Report,) who continues: "Its bed has no very great inclinations, which, for thirty miles at least above the third parallel and fifteen below it, occasions continuous rapids, and in many places falls of two or three feet." Mr. Byrne, assistant computer, says, page 78, "The Pecos traverses its valley in a very tortuous course, and with a current of about two and a half miles to the hour, and from five to twenty feet depth of water." If these data of Mr. Byrne be correct, it must discharge more than half a million of gallons of water per day. From all accounts its displacement of water per day cannot be less than three hundred millions of gallons in the dry season, and at least twice that in the wet season. This shows a remarkably rapid stream; but beside that, the testimony of Captain Pope, settles the question of its great rapidity. There are other well-known streams much more rapid in a large part of their course. We may name the Sacramento of California, and the Marañon, (below called the Amazon,) which, at the Panzo, where it escapes from the Andes, amongst which it has meandered, leaving fine valleys, rushes at those tremendous rapids into the plain below at the rate of nine miles an hour. A missionary in his babba was borne through them at that rate. When we reflect that the free descent (i. e. unobstructed by any obstacle) of falling bodies is at the rate of sixteen feet per second, and increases as the square root of the distance, we may readily believe that a liquid body on a great, or as Captain Pope calls the bed of the Pecos, "a very great inclination," would run at the rate of two and a half miles per hour. Between perpendicular and "very great inclination," however, as used by Capt. Pope, in reference to the river bed there is



of course a wide difference. The river is represented in the same report as about one hundred feet in width.

For the working of the road, then, after it shall have been continued—the Rio Colorado and Sulphur Springs on the East, and the Pecos on the West, supply most ample water. How working parties are to be supplied, will be satisfactorily explained, more in detail than it has been in this article. We find we shall have to omit in this number the extracts from Colonel Gray, as it is now extended beyond the limits first intended. These will be introduced hereafter.—*New Orleans Delta*, Nov. 25, 1855.

#### COTTON SEED AND ITS USES.

In looking over the annual reports of the products of this great staple, one cannot fail to observe that the only product of the cotton crop, extensive as it now is, is the fibrous covering of the seed, the cotton of commerce. The seed itself, the real fruit of the plant, is now of no absolute value except to manure the fields. And when it is considered that nature in most other agricultural products, has made the fruit itself of more value than its covering, it will be readily conceded that the present cultivation of cotton presents an anomaly in agriculture, and one which analogy would lead us to suppose could hardly exist. What if the producer of flax should throw away for one year only, the ripe seed of his plant, would it not be a commercial calamity to be regretted by every citizen of the world? If the grower of wheat, or corn, or oats, should content himself with the product of his farm in chaff, would not civilized nations at once condemn his folly and compel a change of policy? It is true that the value of chaff in the one case, and flax in the other would illy repay the labors of the cultivator but if they paid him a thousand fold, would he not be equally unwise to waste a large portion of the product with which the bounty of nature has repaid his toil? He has sown his seed, nature has given the harvest, and the wise man will make as much of it as he can. And so we conceive it must be with the cotton crop. The cotton fibre is not the only, nor the largest portion of the return of the soil, yet it is at present the only portion that has value, because the only portion applied to the arts, or made to minister to the wants of man.

But is the refuse of the cotton crop of no value? Is there no purpose in the wide range of art or manufacture to which it can be applied, and be a source of profit to the planter? In seeking the solution of this question we shall consider first, the amount of this refuse at the present moment, and afterwards the uses to which it may be applied.

FIRST. The amount of the refuse of the cotton crop. As near as can be ascertained about 5,000,000 acres of land are planted with cotton; the average product of this land is a little over 300 lbs. to the acre, baled cot-

ton, making according to the author of "Cotton is King," in 1853, a total production of 1,600,000,000 lbs. of baled cotton. Now, one pound only of baled is obtained from three and one-third pounds of the rough product.—We have, then the following statement of the cotton product of the country in 1853.

|                                 |               |
|---------------------------------|---------------|
| Total product of the field..... | 6,333,000,000 |
| " baled Cotton.....             | 1,600,000,000 |
| Refuse, thrown to waste.....    | 3,733,000,000 |

This, then, develops the remarkable fact, that the refuse of the cotton crop is, in weight, two and one-third times as great as the present available product of the cotton culture. If Cotton is King now, when only thirty per cent. of the fruit of the cotton plant is made available, what will be the importance of this great staple when the plantation shall yield one hundred per cent. of valuable and available product?

SECOND. The uses to which the refuse of the cotton crop may be applied. The refuse of the cotton crop consists of the seed and a residue of fibre still adhering to it, in the ratio of about 40 per cent. of fibre, and 60 per cent. of seed.

THE FIBRE. The fibre immediately covering the seed is worthless to the spinner, but may nevertheless be made available in the arts, for just such purposes as the worn out fabrics of the manufacturer are now employed, and will supply a commercial want that has long been felt, and for which ingenuity, misdirected, has long sought. This worthless fibre subjected to proper preparation will furnish a valuable supply of material for paper making. Assuming the value of this to be the same as the cheapest rags in market, and we have—

|                               |                    |
|-------------------------------|--------------------|
| Total refuse.....             | 3,733,000,000 lbs. |
| Fibre 40 per cent.....        | 1,493,200,000      |
| Value at one cent per lb..... | \$14,932,000       |

Now allowing 20 per cent for wastage in manufacture, the usual allowance of paper makers, and the quantity of paper made annually from this refuse would be as follows.

|                        |                    |
|------------------------|--------------------|
| Fibre.....             | 1,493,200,000 lbs. |
| Waste 20 per cent..... | 298,640,000        |
| Paper.....             | 1,194,560,000 lbs. |

Estimating this as common wrapping paper at the average price of wrapping paper per pound, and we have

|   |              |
|---|--------------|
| 1,194,560,000 lbs paper at 5 cents..... | \$59,728,000 |
|---|--------------|

And when it is considered that at least two-thirds of this material is suitable for the manufacture of fine printing paper worth from 11 to 14 cents per pound, this will be found to be a low estimate.

A large portion of the profit of this manufacture would accrue to the cotton growing states, as the labor necessary to be bestowed on paper making is comparatively little.

To paper makers and those connected with the press, who know the commercial want of such a material, we need say nothing of the value of such a supply at the present mo-

ment. The most careless observer cannot fail to perceive the important bearing which such a saving annually would have on this portion of our agricultural, manufacturing, and publishing interests.

THE SEED. The seed of the cotton plant is in itself by no means a worthless material. Like flax and other seeds it contains a large per centage of oily matter, which can be extracted, and applied to useful purposes. Recent experiments have shown that Cotton seed oil is one of the most valuable for both illuminating and lubricating purposes. In these respects it ranks equal to the best Sperm oil, but in our calculations of its value we shall put it as equal only to the cheapest grease in the New York market.

Cotton seed when compressed, yields 30 per cent of oil and 70 per cent of oil cake. Assuming the same data as before, the yield of oil would then be as follows.

|                                    |                    |
|------------------------------------|--------------------|
| Total refuse of crop.....          | 3,733,000,000 lbs. |
| Clean seed 60 per cent.....        | 2,239,800,000      |
| Oil 30 per cent of last amount.... | 671,940,000        |
| Oil cake 70 per cent.....          | 1,567,860,000      |

#### VALUES.

The cheapest grease offered in the New York market now sells at ten cents per pound. Assuming this to be the value of cotton seed oil, and we have the following result.

|                                     |              |
|-------------------------------------|--------------|
| 671,940,000 lbs. of oil @ 10 c..... | \$67,194,000 |
|-------------------------------------|--------------|

The value of this oil reduced to gallons would be 75 cents per gallon. The cheapest lard oil in the Cincinnati market at the present time is 90 cents.

Cotton seed oil contains the Stearic principle of other vegetable and animal oils, and is therefore suitable for the manufacture of star candles.

The residue after the extraction of the oil is oil cake, and is valuable for feed. Other oil cake sells at one cent per pound. We shall estimate this at one half cent per pound. Its value then is

|                                       |             |
|---------------------------------------|-------------|
| 1,567,860,000 lbs. @ ½ c. per lb..... | \$7,839,300 |
|---------------------------------------|-------------|

But there is another method by which the oily matter of cotton seed may be extracted which is more applicable to the purposes of the manufacturer, as requiring less labor and less mechanical outlay and skill; we refer to the method of chemical saponification recently invented by Edgar Conkling, Esq., of this city. The advantages possessed by this method are its simplicity and greater production of oily matter. If this method were universally adopted by Southern manufacturers of soap, no portion of the world could compete with the south in the manufacture of that article. It yet remains for chemists to show whether the refuse of the oil maker may not yield starch in abundance, and a valuable dye. We already know that the present residuum is an excellent manure.

CONCLUSIONS. It would seem then from the considerations already mentioned that we annually waste 3,733,000,000 lbs. of valuable



vegetable products, the value of which may be briefly summed up as follows:

|               |               |
|---------------|---------------|
| Paper.....    | \$59,728,000  |
| Oil.....      | 67,194,000    |
| Oil cake..... | 7,839,300     |
|               | \$134,761,300 |

Allowing one half for manufacturing, and there would still remain a clear gain to the country as profits and for cost of material \$67,380,650, over fifty per cent of the present value of the cotton crop.

#### NORTHERN PACIFIC RAILROAD.

*General Description of Region Examined, and Results Accomplished.—General Salubrity of the Region.*

The country thus occupied, or to be occupied, may be described as follows. It lies between the great lakes and Puget Sound, the forty-ninth parallel and the emigrant route of the South Pass. In it are four great rivers—the Mississippi and the Red river of the North, flowing into the Gulf of Mexico and Hudson's bay; the Missouri and Columbia rivers, flowing eastward and westward from the Rocky Mountains in opposite directions.

There are three mountain ranges running in a general direction north and south—the Rocky, Coeur d'Alene, and Cascade mountains. The four rivers are more than powerful auxiliaries as lines of communication in building the road and advancing settlements, affording in their course large tracts of arable and pasture lands and inexhaustible supplies of lumber and stone. They have essentially modified the climate. The Mississippi and the Red river of the North, with their several tributaries interlocking each other, nearly all heavily timbered, make the eastern portion of the field one of inexhaustible fertility, and have great natural advantages for bringing supplies and productions of all kinds to market. The Missouri river has turned the formidable chain of the Black Hills and Wind River Mountains, and with its southern tributaries, especially the Yellowstone, presents a rich and inviting country at the base and into the valleys of the mountains. The Columbia has found its way through the Coeur d'Alene and Cascade chains, affording excellent passes, and the tributaries of the two rivers interlocking in the Rocky Mountains have broken it into spurs and valleys, affording several practicable passes, and with a tunnel admitting the passage of a road at an elevation of about five thousand feet.

In the region of the South Pass the Rocky Mountain range extends from near Fort Laramie, to the valley of the Salt Lake, through nearly seven degrees of longitude, or a distance of about three hundred miles, at an elevation of, from 4,519 feet (Fort Laramie,) to 7,400 feet (South Pass,) and from 4,222 feet (Great Salt Lake,) to 8,400 feet (Wahsatch mountains,) above the sea; and the whole system of ranges to the Pacific extends through seventeen degrees. Northward, none of the subsidiary spurs that branch to the eastward cross the Missouri and Yellowstone, and the main chain deflects considerably to the westward, till in the region extending from the sources of the Missouri to the head waters of Sun river, the system of ranges extends only through nine degrees of longitude, of which three to four degrees are occupied by the Prairie region of the Great Plain of the Columbia, and in the several passes the greatest elevation is about 6,300 feet, and the length of the route where the elevation

exceeds that of Fort Laramie and the Great Salt Lake, is fifty-six miles. Crossing the Yellowstone and Missouri, the whole country eastward to the Mississippi is a prairie region. Puget Sound is in the same longitude as San Francisco, and a railroad through the South Pass to San Francisco or Puget Sound must, without making any allowance for the Great Plain of the Columbia, pass over a mountain region eight degrees in longitude greater than by the route north of the Missouri and Yellowstone.

Thus the distinctive character of the route is the great extension of the prairie region westward; the easy character and the low elevation of the passes of the Rocky Mountains; the practicable character of the passes in the Coeur d'Alene and Cascade mountains, and its connection with the great natural water communication across the continent of the Missouri and Columbia rivers.

The results thus far accomplished may be summed up as follows: The Missouri and Columbia rivers, with the exception of sixty miles of the latter, have been surveyed; three passes, including that of the Columbia river, have been explored in the Cascade and Coeur d'Alene mountains; nine passes in the Rocky Mountains; two lines have been run from the Mississippi river to the base of the mountains; ranges of country south of Fort Union, and between the Yellowstone and Missouri Rivers, at the eastern and western bases of the Rocky Mountains from above our parallel to the forks of the Missouri, and in the territory of Washington, between the Cascade and Coeur d'Alene mountains have been explored. Not only has information been collected in reference to the routes for a railroad, but attentive consideration has been given to wagon roads, to the navigability of the rivers and the part they must play in establishing communications, the adaptation of the country to settlement, the Indian tribes, and the military posts that ought to be established. Additional explorations and surveys ought, however, to be made, to determine the most practicable route for the road, and, incidentally, still further to develop the geography and resources of this region of country. Before passing, however, the consideration of these questions, I will advert to the remarkable salubrity of the whole region included in the exploration.

The reports of medical officers, Dr. Suckley and Dr. Cooper, will show the healthiness of this route. From the Mississippi to Fort Union, in a force of eighty-six men, there were slight ailments growing out of too frequent use of buffalo meat, and the use of saline water, good camping grounds not having been selected; but they yielded readily to treatment, only one person having been confined to his bed, and that was in consequence of his own gross imprudence. With proper choice of camping grounds, there will be no difficulty in nearly always procuring good water and plenty of it.

This portion of the route was made from June 10th to August 1st. From Fort Union to Fort Benton, the party consisted of over one hundred persons, and the time occupied in the march was from August 8th to September 6th—distance 375 miles. Three men became sick, but in each case it was the breaking out of chronic complaints of long standing. From Fort Benton to the Great Plains of the Columbia, the route passed through a well-wooded and bountifully watered country, and there were no cases of sickness in the command.

There was, in the remaining portion of the journey, but one slight ailment; though on approaching the lower Columbia, and in the journey from Columbia barracks to Olympia, the command was exposed to frequent rains. I do not include the case of two persons whose indisposition was caused by gross negligence, and which is referred to in Dr. Suckley's report. The Indians on the route were free from epidemic diseases.

The health of the party engaged in the exploration of the Cascades was also exceedingly good. No epidemic diseases prevailed. Disorders of the digestive organs were common, but yielded readily to treatment. The great dryness of the climate, and the perfect drainage of the country, prevent the prevalence of malarious diseases. Whole tribes of the Indians have, however, been almost exterminated by the small-pox. The Indians never suffer from diseases of the digestive organs, though dry fish and berries are their invariable food. They have sore eyes in consequence of the smoke of their badly ventilated huts, and consumption is common among them, in consequence of poor clothing and shelter, combined with the use of a scanty and unwholesome quality of food. On reviewing the whole route, the unequalled and unparalleled good health of the several parties operating over an extent of country eighteen hundred miles in length appears remarkable, especially when we consider the hardships and exposure necessarily incident to such operations. Not a case of fever or ague occurred. Such a state of health can only be accounted for by the great salubrity of the country explored, and its freedom from malarious or other epidemic diseases. — *Rep. War Department.*

## Opinions of the Press.

#### A PACIFIC RAILROAD.

Upon this important question the Cincinnati *Columbian* seasonably and sensibly remarks, that "mid the discord of rival political parties, the great business and commercial interests of the country must not be forgotten. There are great and important principles to be contended for in the science and practice of Government; but there are equally important facts, the truth of which no one can deny, which demand constant attention. The one now most prominently before us, and that especially concerns the people of the West is a Pacific Railroad. We say a Pacific Railroad, not because we believe that we shall finally have but one of these great peace makers, wealth makers, and inland fortresses, but because there must undoubtedly be a *first*. The distance from the mouth of the Rio Grande to the shores of Lake Superior, and from San Diego to Puget's Sound, is too vast to remain unspanned by a single route of travel.

We say every day that this is a great country; but no one except Kit Carson, and other brave, hardy explorers, know it in all its vastness. The California emigrants who for months kept their faces and weary feet turned toward the setting sun, wearily measuring the ground that intervened between them and their El Dorado, could tell us something of it; but few men live who have traversed the length and breadth of that empire of mountain, and river, and wild beasts, and wild men, which lies between Kansas and the Pacific.

Much of it is said to be too rocky or too



barren for cultivation; but what report would a corps of Topographical Engineers bring back from a second New England. Would the Granite Hills of New Hampshire or the Green Mountains of Vermont, or the Sandy Plains of a Massachusetts, have put in their mouths a flattering tale of a new Arcadia? Unpromising as the Rocky Mountain region doubtless is, we cannot doubt that it gives fairer promise for the future, than that inhospitable region first settled by the Pilgrims.—Before it at one extreme is the golden treasury of the country, and at the other vast forests of noble pines and inexhaustible coal beds. Young Republics there are growing up almost beyond our reach, yet clinging to us with a love of country, that no distance can eradicate and no absence destroy. To doubt that these extremes of our country will be united by more than one iron band, would be to doubt that power of cohesive attraction which we hope to see always binding the Union together. Time can tell the period when all the great enterprises that are linked with the fortunes of the far West, can be consummated. There are five Railroad routes to the Pacific—already more or less explored.

1st. Route of the 47th and 49th parallels, from surveys under Gov. Stevens in 1853-4-5. This survey commences at St. Pauls, Minnesota, and ends at Vancouver, a distance of 1,864 miles. The cost is variously estimated at from \$105,076,000 to \$135,766,000.

2nd. Route of the 41st and 42d parallels, from surveys of Lieut. Beckwith in 1852, and Capt. Fremont, in 1842, and Capt. Stansbury in 1849. This route takes Council Bluffs as a starting point, and terminates at Benicia the capital of California, 2,024 miles, at an estimated cost of \$116,095,000.

3d. Route on the 38th and 39th parallels, from surveys under Capt. Gunnison and Lieutenant Beckwith.

This route commences at Westport, Missouri, and terminates at San Francisco. The distance in a straight line is only 1,500 miles: but the geographical difficulties in the way are said to be so great, that the actual number of miles to be traversed would not be less than 3,000, and the expense of construction renders it impracticable.

4th. Route, near the 35th parallel, surveyed by Lieut. Whipple, in 1853.

This route commences at Fort Smith, Ark., and is supposed to terminate at San Francisco, and the length is set down at 2,174 miles, although the equated distances, (increased length, on account of ascending and descending grades) is estimated at 963 miles, and the cost is estimated at \$169,210,265.

5th. Route of the 32d parallel, surveyed by Captain Pope, Lieutenant Parke, and Lieut. Williamson.

This route commences at Fulton, on Red River, and terminates at San Francisco. The distance is 2,039 miles, and the cost is estimated at \$93,120,000.

The last named route appears to be most feasible, and for several reasons, will be the first finally adopted for the construction of a railroad. The Texas Western Railroad Company has adopted its main positions and direction across that State, and Texas has made to it the most liberal grants of land to help it forward. These grants are 10,240 acres for every mile of road completed, and for the whole distance proposed to be traversed in that State, amount to 8,192,000 acres. These lands are said to be of at least fair value for

agricultural purposes, and will be put into market by the company, when they have acquired a title, at \$2.50 per acre, reserving certain quantities of the most valuable to form an interest fund. The capital stock of this company is \$100,000,000; but, on this amount, its officers propose to collect but five per cent. If the Texas Western Company complete their road, of which there seems a fair probability, there will be a great long stride taken toward the construction of a Pacific Railroad.—*Wellsville Patriot*.

### THE SHORTEST AND EASIEST ROUTE TO THE PACIFIC.

#### THE RESULT OF LIEUT. PARKE'S SURVEY.

We learn from the San Antonio Texan, that on the 6th inst. Lieut. Parke, of the United States Topographical Engineers, with his surveying party, arrived in that city from the west by the El Paso road. The party consisted of Lieut. John G. Parke, United States Topographical Engineers, commanding; A. H. Campbell, Civil Engineer; N. H. Hutton, H. Custar, Assistants; G. G. Garner, Astronomer; Dr. Antisell, Physician and Geologist.

The Texan gives the annexed highly interesting account of the survey and its results. Our readers will be glad to learn that the survey proves the route examined to be the shortest and easiest route to the Pacific.

This party has been in the field actively engaged since 22d November, 1854. From that date till the close of May last, they were engaged in California. On the 29th of May they left San Diego and reached the Rio Grande at Fort Fillmore on the 6th of Aug., having spent most of the interval in the examination of that extensive and almost desert country which borders the Gila.

Lieut. Parke was the first of the surveying officers in the field, under the grant made by the last Congress for the purpose of finishing the surveys necessary to complete the various lines for the Pacific railway, and reporting to Congress the result of his labors. He was directed to examine for a suitable road in Southern California, from Mastery bay to Los Angeles, and between the coast range of mountains and the Sierra Nevada. As the parallel of 32 degrees east of the last mentioned mountains had been to a great extent surveyed previously by Lieut. Williamson, Mr. Parke was not required to repeat an examination, but was directed to examine certain points on the line between the Pimas villages, and the Rio Grande, the result of which has been the exploration of the San Pedro river, and a more thorough examination and reconnoissance of the country immediately south of the Gila, and included in the "Gadsden purchase." Here, as well as in California, many new topographical discoveries have been ascertained, and as far as a railway along this route is concerned, the information as obtained may be considered complete and conclusive; and in fact proves that the line examined (near parallel 31 degrees) is the shortest and easiest route to California, requiring no tunneling, there being no steep ascents, and goods can be carried over the whole route; and by avoiding Tusan and striking for the Gila, which receives the San Pedro, the long and dreaded jornada of ninety miles may be avoided. Even as a wagon and emigrant route this now proposed and traveled by Lieut. Parke in this expedition will save distance and fa-

tigue to animals, as more grass and water is to be had than by the "commission boundary" route, or "Colonel Cook's trail."

By proceeding almost due west from Cook's Springs, by Ojo de Vaca, a series of valleys running north and south is reached, bounded by short ranges which can be traveled round these valleys locking round into each other and tending northwest to the Gila river, which may be struck where the fertile little valley of the San Pedro (the Rio Chiquito or the Apaches) meets that river; in this course every mountain range is avoided, and a country tolerably well supplied with gramma grass is traveled over.

By adopting this as the railway route, all tunneling might be avoided by adopting the precautions necessary to supply large trains. Farther south than this is the desert country of Tucson, and the elevated land of the Guadalupe Canon; and north of the Gila is a mountainous and sterile tract; so that nature has here provided a belt of land and almost as level as a prairie for the iron horse. When this is contrasted with the other routes, its advantages are at once apparent. Thus selected three of the most practicable routes, viz:

1. That of the 41st parallel, or the Mormon route, which runs from the Platte river over the plains to the South Pass, thence to Salt Lake, thence across the Great Basin to the Sierra Nevada, and into California by Sacramento river to Benicia.

2. That of the 35th parallel, or Rusk's route, which passes from Fort Smith to Albuquerque on the Rio Grande, thence across the Rocky Mountains, to Colorado river and desert, and the southern end of the Sierra Nevada to Los Angeles and San Pedro in California.

3d. That near the 32nd parallel, or Lieut. Parke's route, the extreme southern one, via. San Antonio, New Mexico, the Gadsden purchase, near the Gila, over the Colorado desert and across the southern extremity of the coast Cordilleras to San Diego, California.

We will now give the length of the three routes in miles, and also the comparative cost:

|                           | No. 1.        | No. 2.        | No. 3.       |
|---------------------------|---------------|---------------|--------------|
| Length of route.....      | 2,032         | 1,892         | 1,618        |
| Length of level route.... | 2,583         | 2,816         | 2,239        |
| Comparative cost. \$      | \$116,095,000 | \$169,310,265 | \$68,970,000 |

From these figures the advantages of the Texas route is apparent. It is almost one third shorter than any other route between the Mississippi and the Pacific, it goes by a country where the Rocky Mountains drop down, and are only represented by elevated mesa land, and it strikes California where its two ranges of mountain chains have coalesced into one, and consequently where less hill labor is encountered.

The route lays over elevated land, requiring but little grading, and over a country where winter snow rarely falls—and never accumulates. On the routes farther north the Rocky Mountains present a barrier requiring extensive grades and tunnelings, and where winter travel is liable to be obstructed.

If this route be carried from El Paso into Arkansas, via. Fulton, as is contemplated in the calculations made in the report of the Secretary of War, published a few months ago, a tract of land without water has to be passed over. To obviate this difficulty is the occupation of Capt. Pope, in endeavoring to form artesian wells on the Llanos Estacados of New Mexico. The success of this experi-



ment is very doubtful, and hence the route through Texas, via. of San Antonio is the one which is equally short and has more advantages.—*Ind. State Sentinel.*

**SOUTHERN PACIFIC RAILROAD.—THE PROSPECT OF GETTING WATER ON THE PLAINS IMPROVED.**—The idea generally entertained that the immense arid plains lying between the Mississippi and Rocky Mountains must remain forever unsettled and uncultivated on account of the scarcity of water and fuel, is likely to undergo a change. Scientific men are now exploring these plains, or prairies, and from the little we hear of their researches, the prospect appears good that an abundance of coal and water can be obtained at a small outlay of money and labor. Successful experiments have been made in testing the practicability of boring Artesian wells, and the result is most satisfactory. In one instance, near the Pecos River; about the thirty-second parallel, at the depth of six hundred and thirty feet, the greatest abundance of perfectly pure water was obtained. Besides this, the operation developed the existence of coal beds, easily accessible, and, as far as the experiments have progressed, evidently underlying the whole of that immense country.

The importance of this discovery will at once be apparent. If rivers cannot be created by these wells, water sufficient may be obtained for all the purposes of irrigation, and thus the plains may become as thickly inhabited, and the land rendered as productive as any other portion of our country. With plenty of coal for fuel, the want of timber will hardly keep back the pioneer; for the materials for building are too numerous to admit of such a supposition. The thorn will, doubtless, grow as well there as here, and live hedges, even in sections where forests are abundant, are now adopted by the farmer.—*Galveston News.*

**CUMBERLAND VALLEY R. R.**—A supplement to the charter of this road authorizes its Directors to extend their road from Chambersburg to any point in Maryland, to purchase, relay and put in running order the present Franklin Railroad, and accept any charter privileges for these purposes which have been granted by the State aforesaid.—That part of the road lying in Pennsylvania to be commenced within six months and completed in one year after the passage of the act, upon the failure thereof, the charter to be null. For this purpose the Company is authorized to increase their stock to \$1,500,000, and to issue bonds for the whole or any part, and to secure the same by a mortgage of all or any part of the road, franchise and property, real and personal, of the said Company.

**SOUTHERN PACIFIC,**  
OR,  
**Texas Western Railroad Co. Agency.**

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$3 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,  
CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, MARCH 3, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD,..... EDITOR.

W. WRIGHTSON, } ASSOCIATE EDITORS.  
T. WRIGHTSON, }

CINCINNATI, ..... MONDAY, MAR. 3.

### VALUE OF THE PACIFIC RAILROAD IN CASE OF A WAR WITH EUROPE.

It is almost utterly impossible to make an accurate calculation of the real value of a railroad to the Pacific, in case of war with a powerful naval opponent. Any comparisons we may draw must necessarily fall far short of the actual truth. We might, with great pertinence, ask what would have been the value to the Emperor of Russia of a railroad to the Crimea? With what ease, and at how much less cost could he have doubled his army in the Crimea, and with one grand *coup de main*, have crushed the Allies, or at least have resisted them on more equal terms. It would probably have saved him 100,000 lives, and \$100,000,000 of treasure—the fortifications of three centuries, and the more quiet possession of his territory.

As the case was, the Allies had every advantage in the transportations of both troops and supplies. They had swept the seas, and hence, without any fear of molestation, they shipped their munitions of war, at but little cost, and with the most perfect security.

What would be the position of this country in case of a similar war? Without any disparagement to the bravery of our marine, or its ability to cope with a superior force, it is not at all to be supposed that they could perform much service, in the transportation of troops and military stores by the routes, which those articles, on account of cheapness, at present take, viz: by the Isthmus, or by Cape Horn, provided our opponents were the combined forces that attacked Russia. Hence, in making the estimated value of a railroad to the Pacific, in case of war, we would have to base it on the transportation of troops overland to the various points of attack, and as the most certain method of getting at the truth, is to compare facts, we will have our estimate on the war of 1812, which is the only reliable basis.

In the war of 1812 supplies had to be transported from Albany to the frontier, a distance of say 300 at an average cost of \$225 per ton, and required an average of 20 days to perform the journey

Now let us double up this cost on the comparison of distances, on any of the most favorable routes to the Pacific coast, say for

2,000 miles, as the distance by wagon travel, and we have a cost for all supplies and munitions of war per ton of \$1,833. For an army of 50,000, the total weight of baggage would be, allowing 100 pounds to each, man, 2,500 tons baggage, would give us a gross amount of freight transportation of \$4,852,500. To this add quadruple the amount, or three pounds of provisions per day for 133½ days, consumed in the marching of the army over 2,000 miles, and we have as the cost of transporting the necessary supplies of an army of 50,000 men, while in *transitu*, \$19,330,000. Cost of transportation of provisions for an army of 50,000 men for one year \$57,990,000. This amount alone is sufficient to build the southern route to the Pacific.—The cost of transporting the *ammunition* for 1,000 sea coast guns, for one year, according to the report of the Secretary of War, would be \$3,000,000, and the cost of transporting the guns would be \$33,000,000, by land transportation at the rates paid in 1812. The cost of transporting field guns with one year's supply of ammunition would be, say for 500 twelve pounders \$3,750,000, and for 500 twenty-four pounders \$13,500,000.

|  |               |
|--|---------------|
| Transport of baggage for 50,000 troops.....  | \$ 4,852,500  |
| " provisions while in transitu.....  | 19,330,000    |
| " " for one year.....  | 57,990,000    |
| " on 500 twelve pounders with one year's ammunition.....                                       | 3,750,000     |
| " on 500 twenty-four pounders with one year's ammunition.....                                  | 13,500,000    |
| " 1,000 sea coast guns with their ammunition for one year.....                                 | 36,000,000    |
| " other military stores.....   | 50,000,000    |
| Total.....   | \$185,152,500 |
| To this aggregate we must add the pay of the army for the four months being \$32 each man..... |               |
| Cost of provisions @ \$80 each while in transitu.....  | 1,600,000     |
|  | 4,000,000     |
|  | \$190,752,500 |

If the Pacific Railroad were built, we would be within five days of the Pacific coast, instead of 133½, and the cost for transporting provisions, baggage, ammunition and ordnance, will be \$800 per ton, instead of \$1,833, while men could be taken over the road at a cost of not more than \$40 each. Without it the perishable character of the materials transported would necessarily produce great loss, and the complete absorption of all fodder on the route would render it entirely impracticable and out of the question—it could not be done at all.

Gen. Jesup, in his report on this subject, states:

"For General Harrison's army on the northwestern frontier, there were instances when the teams, loaded with forage, not only consumed all they were transporting to that army, but had to draw forage from the army depots to enable them to return. Much

of the subsistence intended for the army was also consumed by the teamsters and escorts en route."

If such were the case in the short distances of that campaign, what would be the result in sending to the Pacific coast?

These statements are startling *facts*, as our readers will readily perceive by reference to the published reports of the Hon. Secretary of War; and, as such they claim the serious attention of the nation. If, as many of her leading Statesmen believe, we are on the eve of a war with the older European governments, if we are indeed soon to cope with the greatest maritime power in the world, if our commerce with ourselves, now driven by necessity on a seaboard path, is soon to be liable at any instant to the attacks of hostile cruisers, what will be the responsibility of our national legislators, if they suffer this great national necessity to be unheeded! If, in the jars of party strife and sectional feeling they neglect to provide for those great national interests which call in trumpet tones for legislative action, what will be the measure of their accountability to those who sent them to take care of the nation's welfare!

### MISSOURI PACIFIC R. R., SOUTH-WEST BRANCH.

We publish to-day an interesting communication from James W. Taylor, Esq., of Columbus, on this important subject. The object of Mr. Taylor, like that of all other friends of the Pacific project, is to get a road, the best, surest and most speedy to the Pacific coast. To accomplish this to the best advantage, Mr. Taylor contends that it is desirable to extend the south-west branch of the Missouri Pacific Railroad in the same general direction till it intersects the road, following the parallel of 32 degrees in the State of Texas. Thence uniting with the Texas Western Railroad, and striking the Pacific at San Diego. His topographical description of the country would indicate that a road through this section was a feasible project. That it would benefit and develop the region through which it would pass, does not admit of a doubt.

In connection with this project, the subject for the consideration of the General Government is precisely the same as that of the Southern Pacific Railroad, and it would require no additional provision of land now belonging to the United States. Texas has provided for a road through her boundaries, and it only remains for the United States now to provide the means for that road to be extended to the Pacific—a mere pittance for the government, compared with what must be asked for any other route.



[From the Ohio Statesman.]

**THE SOUTHWESTERN OR NEOSHO ROUTE OF A PACIFIC RAILWAY—THE EXPEDIENCY OF LEGISLATION IN ITS FAVOR BY THE CHEROKEE, CREEK AND CHOCTAW NATIONS.**

HON. GEORGE W. MANYPENNY,

*Commissioner of Indian Affairs:*

SIR—I am convinced that the Cherokee, Creek, Choctaw and Chickasaw nations, whose exclusive right to occupy the extensive and fertile district west of the State of Arkansas rests, as you have emphatically observed in your last annual report, upon treaty grants whose assurances and guarantees are as sacred and binding as the covenants in a settler's patent—I am convinced, I repeat, that these communities have it in their power with the concurrence of Congress, to contribute materially to the construction of a national highway to the Pacific Ocean, and thereby greatly increase their own resources. Your attention, as an officer and citizen, and also the attention of the chiefs and leading men of those Indian nations, are respectfully invited to a few considerations in favor of some measures of railroad extension through the region in question—a region, which will probably be known in the future legislation and geography of the country, as the Territory and State of Neosho. Indeed, such an organization was the purport of a bill reported to the Senate of the United States, on the 28th of July, 1854, by Senator Johnson, of Arkansas, the provisions of which it is understood, are unacceptable to the Indian councils. The report, which accompanied the bill, explicitly recognized the domain conveyed by the United States to the Cherokee and other nations as fully and exclusively their own. No other policy will be tolerated by public opinion; and I assume that no other is contemplated.

In 1854, the Chickasaw Indian agent, Mr. A. J. Smith, wrote to your department, that the Chickasaws were "disposed to offer their vacant lands to the United States Government for *railroad stocks*, or some other basis of income." Here is a hint of the policy which I would urge upon the favorable consideration of all the Neosho nations. It will be evident, from a view of the map, that a line drawn due Southwest from St. Louis, will traverse the country of the Cherokees, the Creeks and the Choctaws diagonally—crossing the Red river in about longitude 99 deg. west of Greenwich, and connecting near the head waters of the Brazos and Colorado rivers of Texas, with the Pacific railway, which is projected through that State on a parallel of 32 deg. Already a railroad is under contract and in course of construction from St. Louis to the Southwestern angle of Missouri, in aid of which Congress has made a grant of 1,200,000 acres of contiguous land. This road shares in the recent appropriation

by the Missouri Legislature, and we may therefore assume that its completion, at no distant day, is fully assured. Let us imagine ourselves at the point thus reached, on the Southwest border of Missouri. A glance at a railroad map of the United States shows a dense network of railways—even denser than in any other direction—from Boston southwardly to the village of Neosho near the southeastern extremity of Kansas, New York, Pittsburgh, Cleveland, Columbus, Cincinnati, Indianapolis and St. Louis, being prominent and controlling points of the diagonal zone from the Ocean of the Atlantic to the Ocean of the Prairies.

Now, my proposition is, to continue in the same general direction through the Indian Territory and Northwestern Texas, developing the most fertile and beautiful region of the continent, and making the traverse of the American Desert near the parallel of 32 deg. more thoroughly a national route to the Pacific. Let the councils of the Cherokee, Creek, Choctaw and Chickasaw nations unite in an incorporation of a railroad company, or recognize and extend the charter of the Missouri company, which will soon connect them with St. Louis—let those councils next make grants of lands (Texas grants 10,400 acres per mile to the Pacific railroad) in aid of its construction; and then survey and sell the alternate parcels within fifteen miles on each side of the line for the benefit of their own national treasuries. If such a measure was submitted for the approval of Congress, (which would be indispensable to its efficacy) there would be no doubt of a favorable result. Texas would unquestionably be as liberal of encouragement to the section of the road extending southwest from the Red river through the valley of the Little Wichita and on the divide between the Double Mountain Fork and the Clear Fork of the Brazos river, and thence to the junction with the Texas railway trunk near the head waters of the Colorado of the Gulf of Mexico.

The great merit of the Neosho route, now proposed, is, that the immense railway system, which pursues the valley of the Ohio from Pittsburg and Cleveland to St. Louis, is carried forward in the same general direction with which it started from the Alleghenies, instead of being forced unnaturally southward to Memphis or Vicksburgh. Either of these routes follows two sides of a triangle, while the Neosho route shoots across their hypotenuse—our argument admitting that it is extremely desirable to connect by the shortest line practicable the Northern system of railroads with the El Paso and San Diego route across the continent. But, on this head, I can add nothing to the suggestions prompted by a map of the United States.

Another advantage, besides the reduced distance, is the more favorable surface of the proposed route. The vicinity of the Missis-

sippi below St. Louis opposes swamps or bluffs—either alternative being adverse to the construction of a railway, but a course due Southwest from St. Louis, although traversing a semi-mountainous district to the vicinity of Springfield, there emerges upon the great prairie region which recent explorations demonstrate to be well suited for railroad grades.

I propose to devote the remainder of this communication to a brief summary of the resources of the country traversed by the proposed route.

1. THE MISSOURI SECTION.—The whole line from St. Louis to the Southeast corner of Kansas Territory is two hundred and seventy-one miles in length. At Franklin, thirty-eight miles from St. Louis, is the point of junction with the central line, and from this place the Southwestern branch, as it is called, traverses a district, whose hills are densely covered with pine forest, and are full of iron, copper and other valuable minerals. There is also an abundance of water power; the climate is dry and genial, and the soil and geological formation are similar to the wine growing districts of Europe. The distance from Franklin to Springfield is two hundred miles; and near Springfield (to quote from an article in the St. Louis *Intelligencer*) the Southwestern Railroad, after penetrating and laying open the region of minerals and lumber above described, emerges into "a splendid country of inexhaustible fertility and salubrity, rolling away in majestic undulations, sprinkled with groves and traversed by belts of forest." There seems to be no doubt, that this road will be made profitable, solely by its local business, even should it never be extended further than the Southwest boundary of Missouri.

2. THE NEOSHO SECTION.—Before reaching the Cherokee country, we find three small reservations on the east bank of the Neosho river, occupied by the Senecas, the Senecas and Shawnees, the Quapaws, most of which will soon be in market under recent treaties for the benefit of those Indian bands. Rev. Isaac McCoy, who was employed in 1831-2 by the Department of War, as surveyor and general Indian agent, represents the Seneca tract (67,000 acres on the Eastern bend of the Neosho river,) as "particularly good. Neosho river," he proceeds to say "runs across the Western end of it, and Elk river, a bold perpetual stream, about thirty-five yards wide, runs through it from East to West. The tract is diversified with woodland and prairie, having an abundance of wood and first rate prairie, and well supplied with perpetual springs." The allotments to the Senecas and Shawnees and the Quapaws, embracing a district 40 miles by 31, are described in similar terms.

The country occupied by the Cherokees, as Senator Johnson observes in his late re-



port, is as rich and beautiful, as well-watered and healthy, as the finest portions of Iowa and Wisconsin, as lovely in its prairie scenery as the choicest parts of Texas. It consists of 13,000,000 acres, mostly lying within latitude 36 and 37 deg. One Indian agent represents the staple productions of the people to be corn, wheat and oats; that the country is well adapted to apples, peaches, plums, and similar fruits; that stone coal, iron and salt springs are abundant and profitable, and that the country is admirably adapted for grazing cattle, of which the Indians have extensive stocks. In consequence of the climate, only a portion of the country resembling the Northern parts of Alabama, is suited for the cultivation of cotton. Tobacco and hemp flourish as in Missouri and Kentucky.

The Creeks occupy 13,140,000 acres, except a small tract assigned to the Seminoles on the Deep Fork of the Arkansas, in longitude 97 deg. The Creek country lies immediately West of Fort Gibson, extending from the Canadian river to the 36th parallel of latitude. It is noticed by James Logan, who was an agent in 1847, as "a country of abundant extent, well timbered and watered, of fertile soil and of comparative healthfulness, offering every facility for the rearing of stock." The scene of Washington Irving's "Tour on the Prairies," is comprised in the Creek district.

The Choctaw country, of which the Western half has recently been assigned to the Chickasaws and some smaller bands of Indians, extends from the Red river to the Canadian and from the Western boundary of Arkansas to the 100th meridian of longitude. Between longitude 94 and 97 degrees, or the Choctaw territory as recently reduced, some cotton is grown near Red river, but corn and wheat are the prominent crops. An agent writes in 1851: "The soil produces the finest of wheat, weighing sixty-five to seventy pounds to the bushel; as a grazing country, it is likewise unsurpassed: the extensive prairies, clothed with luxuriant grass, being capable of sustaining innumerable flocks and herds throughout the year." In 1854, Mr. A. J. Smith, the present Chickasaw agent described some medicinal or "oil springs" on the Washita river, as very efficacious. Coal, copper and salt are found in ample quantities.

Captain Randolph B. Marcy, of the 5th Infantry, U. S. A., constructed a military and emigrant road in 1849 along the northern portion of the Choctaw country from Fort Smith, Arkansas, toward Santa Fe, New Mexico, and thus describes the vicinity of the Canadian:

"On departing from Fort Smith, this road traverses a gently undulating district, sustaining a heavy growth of excellent timber but occasionally interspersed with prairie lands, affording luxuriant grass for eight months in the year, and intersected with nu-

merous small streams flowing over a highly productive soil; thus embracing the element of a rich and beautiful pastoral and agricultural locality. This character continues for one hundred and eighty miles, to near the 99th meridian of longitude, where the road emerges from the woodlands and enters the great plains, where but little timber is seen except directly along the borders of the water courses. The soil soon becomes thin and sandy, and owing to the periodical droughts of the summer season, would require artificial irrigation to make it available for cultivation."

Having already given a description by Indian agents of the eastern section of this Choctaw and Chickasaw district, I propose to quote an attractive picture of the region between longitude 97 and 100, and extending from Red river to the Canadian, from Capt. Marcy's "Exploration of the Red River of Louisiana in 1852." He delineates this region as about one hundred and eighty miles in length by fifty in width, and constituting an aggregate of about nine thousand square miles of valuable and productive lands, or one thousand square miles more than the State of Massachusetts. Before exploring it Capt. M. had successfully accomplished the object of his expedition—the discovery of the sources of the Red river in the Great Staked Plain—and was on his return to Fort Arbuckle, a post situated on the False Washita about midway of the Choctaw Territory. On the 14th of July, he crossed the meridian of 100 degrees, and pursued a northeast course at the southern base of a granite formation, called the Wichita mountains. At this point, I make way for a few descriptive passages from his published journal. (Senate Documents, 1852-3, Vol. VIII, pages, 66-82.)

"July 14.\*The mountains here appear to be in groups or clusters of detached peaks, of a conical form indicating a volcanic origin, with smooth, level glades intervening; and rising as they do, perfectly isolated from all surrounding eminences, upon the plateau of the great prairies, their rugged and precipitous granite sides, almost denuded of vegetation, they present a very peculiar and imposing feature in the topographical aspect of the country. From the fact that the ground occupying the space between the mountains is a level, smooth surface, and exhibits no evidence of upheaval, or distortion, may it not with propriety be inferred that the deposition here is of an origin subsequent to that of the upheaval of the mountains?

"July 15. We were in motion at 2 o'clock this morning, and taking a northeast course towards the base of the mountain chain passed through mezquite groves, intersected with several brooks of pure water flowing into the south branch of the Cache creek, upon one of which we are now encamped. We find the soil good at all places near the mountains and the country well wooded and watered. The grass, consisting of several varieties of the grama, is of a superior quality and grows luxuriantly. The climate is salubrious, and the almost constant cool, and bracing breezes of the summer months, with the entire ab-

sence of anything like marshes or stagnant water, remove all sources of noxious malaria with its attendant evils of autumnal fevers.

"July 16. Our reveille sounded at two and we were *en route* at three o'clock this morning. Continuing a northeast course for four miles, we crossed a fine stream of clear water, issuing from the mountains and running into the south branch of Cache creek; after traveling three miles further we passed another, and made our encampment on the third; all of these were of about equal magnitude, and similar in character. They take their rise from springs among granite mountains, and flow over the detritus and sand at the base; are about twenty feet wide, with the water clear and rapid. The banks are abrupt, about ten feet high, and composed of white clay and sandstone. Upon each of these branches, there are large bodies of post-oak timber, much of which would serve as building material, and near the bank of the creek we observed black walnut. Within a distance of six miles around our camp, I should estimate the amount of woodland at eight thousand acres. The grass is of the very best quality, and the soil cannot be surpassed for fertility.

"We are, at this place, at the base of one of the most lofty and rugged mountains of the range. Its bare and naked sides are almost destitute of anything in the shape of a tree or plant; and it is only here and there that a small patch of green can be discerned. Huge masses of flesh colored granite, standing out in jagged crags upon the lofty acclivities, everywhere present themselves to the eye, and the scenery is most picturesque, grand and imposing.

"July 17. Moving out from camp at half past three this morning, we journeyed along the southeastern base of the mountains, passing several spring brooks of cold, delicious water, flowing from the deep gorges of the mountains, over the masses of loose rock at the bases, into the valley below. These brooks are perennial, and this being the dry season, they are probably now at their lowest stage, yet there is a sufficiency of water for all purposes of farmers and for milling. The soil continues of an excellent quality, and sustains a heavy vegetation. In addition to the advantages of rich soil, good timber and water, which everywhere abound near the mountains thus far upon our route, may be added that of the great salubrity of the climate. The atmosphere in those elevated regions is cool, elastic and bracing, and the breezes which sweep across the prairie temper the heat of the sun, and render it, even in midsummer, cool and comfortable. \* \* We are encamped this evening upon a swift running brook, near a very cold spring of pure water. Following up the large brook, into which the spring empties, I found its source in a most lovely valley, about two miles above our encampment. This valley, which is enclosed on three sides by lofty mountains, is mostly covered with a heavy growth of timber of a very superior quality. The trees, which are oak, are large, straight and tall, and are the best suited to the carpenter's purposes of any I have ever seen, west of the "Cross Timbers." The soil here possesses great fertility, and the whole valley teems with an exuberance of verdure.

"July 18. We changed our course this morning to the North, and passing up the valley of the creek, found a gap or pass in the first chain of mountains, through which,



after much difficulty, we succeeded in forcing our wagons. Reaching the open prairie upon the North, we found ourselves on the banks of a large stream at the base of the most elevated mountain in the Wichita chain [1135 feet high, and named by Captain M., Mount Scott.] To the North of Mount Scott lies one of the most beautiful and romantic valleys that I have ever seen. It is about three miles wide, enclosed between two ranges of mountains, and through its center winds a lovely stream of pure water, fifty yards wide and two feet deep, the lively current of which rushes wildly down over an almost continuous succession of rapids and rocky defiles. It is fringed upon each side with gigantic pecan, overcup, white ash, river elm, and hackberry trees. About the base of the mountains, we find an abundance of post-oak, and towards the summits, the red cedar grows. The soil in this valley is highly productive, and sustains a heavy vegetation. The grass is very dense, of a good quality and from two to three feet high."

On the 19th of July, the party passed beyond the mountains, and near their eastern extremity, found two deserted Indian villages. The situation of one of them is described as "upon a plateau, from which was presented to the eye a most charming diversity of scenery, consisting of mountains, woodlands, glades, water courses and prairies, all laid out and arranged in such peculiar order, as to produce a witching effect upon the senses. The soil, in point of fertility, surpasses anything we have before seen, &c., &c."

I restrain myself from further extracts in detail, but add the enthusiastic officer's general observations upon this lovely region.

"The more we have seen of the country about these mountains the more pleased we have been with it. Indeed, I have never visited any country that in my opinion, possessed greater natural local advantages for agriculture than this. Bounteous nature seems here to have strewed her favors with a lavish hand, and to have held out every inducement for civilized men to occupy it. The numerous tributaries of Cache creek, flowing from granite fountains, and winding like network in every direction through the valleys in the mountains—with the advantages of good timber, soil and grass, and pure, elastic, delicious climate, with a bracing atmosphere—alunite in presenting rare inducements to the husbandman. It would only be necessary for our practical farmers to visit this locality; they could not be otherwise than pleased with it; and were it not for the fact that the greater part of the most desirable lands lie east of the 100th meridian of longitude, and within the limits of that vast territory ceded by our Government to the Choctaws, it would be purchased and settled by our citizens in a very few years."

Seven days further travel through a country which constantly elicits praise from Captain Marcy, brought his party to Fort Arbuckle. On the route he traversed the 'Cross Timbers'—a feature of the Indian territory and Texas so remarkable, that I repeat his description:

"This extensive belt of woodland, which forms one of the most prominent and anomalous

features upon the face of the country, is from five to thirty miles wide, and extends from the Arkansas river in a Southwesterly direction to the Brazos some four hundred miles. At six different points where I have passed through it, I have found it characterized by the same peculiarities; the trees consisting principally of post-oak and black-jack, standing at intervals that wagons can without difficulty pass between them in any direction. The soil is thin, sandy, and poorly watered. This forms a boundary line, dividing the country suited to agriculture from the great prairies, which, for the most part, are wide and destitute of timber. It seems to have been designed as a natural barrier between civilized man and the savage, as, upon the east side, there are numerous spring brooks, flowing over a highly prolific soil, with a superabundance of the best of timber, and an exuberant vegetation, teeming with the delightful perfume of flowers of the most brilliant hues, here and there interspersed with verdant glades and small prairies, affording inexhaustible grazing, and the most beautiful natural meadows that can be imagined; while on the other side commence those barren and desolate wastes, where but few small streams greet the eye of the traveler, and these are soon swallowed up by the thirsty sands over which they flow; here but little woodland is found, except on the immediate borders of the water courses."

3. THE TEXAS SECTION.—A few additional quotations from Capt. Marcy's interesting volume will exhibit the character of the proposed route from the Red river near the junction of Cache creek, through Northwestern Texas to the parallel of 32 degrees on the meridian of 102. In the early part of his tour, he descended the valley of the little Wichita\* to Red river, and thus describes it:

"The soil in the valley is very productive; the timber consisting of overcup, white-oak, elm, hackberry and wild china, is large and abundant, and the adjoining prairie is covered with a heavy growth of the best grass. The stream at fifteen miles above its confluence with the Red river is twenty feet wide and ten inches deep, with a rapid current, the water clear and sweet. From the point where I first struck it, good farms could be made along the whole course of the creek to its mouth. The country adjoining is high rolling prairie, interspersed here and there with groves of post-oak, and presents to the eye a most pleasing appearance."

Passing Southwest from the sources of Little Wichita, Fort Belknap on the Upper Brazos is next reached. Here extensive fields of bituminous coal are found, which burns readily with a clear flame, and is very superior in quality. Capt. Marcy thus describes the remainder of our Texas section:

"From the Brazos the road skirts small affluents of that stream and the Colorado, through a country more undulating than that east of the Brazos; but no mountains are met with, or elevated hills, which cannot be avoided by short detours. Here and there prairies present themselves, but this section is for the most part covered with a growth of trees called mezquite, which stand at such intervals that they present much the appearance of an immense peach orchard. They are from five to ten inches in diameter; their

stocks about ten feet in length, and for their durable properties are admirably adapted for railway ties, and would furnish an inexhaustible amount of the very best of fuel. The soil upon this section is principally a red argillaceous loam, similar in appearance to that in the Red river bottoms, which is so highly productive, and extends to near the 102d degree of longitude, or about three degrees further West than the arable soil upon some of the more northerly routes."

There is no necessity that I shall enlarge upon the singular combination of advantages which these extracts from reliable observers indicate—timber, minerals, soil, coal, salubrity. As a connection of the Missouri river and the Gulf of Mexico, over the fertile plateau which forms the first terrace from the Mississippi alluvion to the snows of the Rocky Mountains, the proposition stands on its own merits, and can be vindicated wholly irrespective of any relation to the Pacific railway. But in that important relation, I commend my diagonal route—the actual Southwestern route—to all who are disposed to harmonize sectional antagonism on this subject. Let New Orleans, Vicksburg and Memphis—aided by the munificence of the Texas grant of lands—push on their converging lines to the vicinity of Fort Chadbourne, in Texas; where, in good time, St. Louis, representing New York, Philadelphia, Baltimore and the valley of the Ohio, and concurring with a liberal railroad policy on the part of the Cherokee, Creek, Choctaw and Chickasaw nations, may meet and join in the further enterprise of linking the ocean coasts of the continent.

Such a recognition by Congress and the railway world, of the Indian nations referred to, as the indisputable proprietors of their extended domain west of Arkansas and on the Upper Red river, and their participation in the pecuniary and material benefits of such a connection with the civilization of the world, I am willing to believe, would be regarded by yourself, Sir, as an application of the principles urged so earnestly in all your communications. So believing, I have ventured to address you as above, and remain

Yours respectfully

JAMES W. TAYLOR.

COLUMBUS, O., Feb. 16, 1856.

\*A little explanation may be necessary to prevent confusion of names. Near the mouth of the Red river, its principal tributary is the Wichita, which also is the name of a range of mountains in Arkansas; within the Indian territory, another branch is the False Wichita, but the range of mountains near longitude 100 degrees, described above, are called Wichita, and opposite Cache creek the Big and Little Wichita rivers flow from Northwestern Texas into the Red river.

THE COURSE OF TRADE.—It is a significant fact that a line resting at one extremity in New York, and the other on a point which may be regarded as the center of the China and East India trade, will coincide with the great southwest line of railroads built and building from New York and Cincinnati and the Southern Pacific Railroad, on the parallel of 32 degrees.



## ON THE PACIFIC RAILROAD.

NEAR THE 32D PARALLEL OF NORTH LATITUDE IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

## NO. II.

The supplies of water for the working of the road after its construction have been pointed out, and shown to be ample. We will now consider the means of supplying water for the working parties on the road, and exhibit further its general superiority, by extracts from the Report of the Secretary of War and from Mr. Gray's Report.

On page 33 of his Report the Secretary says: "It is supposed that the road is to be built from both ends, in sections not greater than 50 miles each, and made to aid in building itself, transporting its own material, &c., so far as the proper adjustment of time and means will admit."

Hence it is obvious that water could be transported in less than an hour for working parties, as far as twenty miles from the sources of supply on the eastern side of the Llano Estacado. This is at the Sulphur Springs (so called) of the Colorado, four of which are pure water and but one slightly tinged with sulphur, and affording a supply sufficient to work the road after construction, and consequently vastly more than enough for the working parties, which will not be composed of great numbers. From the 125 miles of the Llano Estacado, we may therefore deduct 20, which can be supplied from the Springs at its eastern terminus, although it may be found more expedient to bore an artesian well, construct a common well, or make a tank at a distance of about ten miles from the eastern verge, selecting the alternative according to the indications of the localities. Captain Pope has well stated the case with respect to the means of supplying water for the working parties and traveling purposes, page 48 of his report. I will add with emphasis, that if the attempt to obtain water by artesian wells should fail, there can be no doubt of the success of common wells, and of tanks; but I believe the experiment now being made to obtain water by artesian wells, will succeed. Artesian wells, four in number, would afford an ample supply for the incipient operations of the road, for traveling purposes, and for a large number of animals, it is reasonable to calculate the amount of water from these sources at forty gallons per minute to each well, or 57,600 gallons per day, 2,400 per hour. Some one of the four may greatly exceed this. An artesian well near London, sunk in 1794 gives forth running over at the surface, forty-six gallons per minute. The recent well obtained for the Naval School at Annapolis gives forth about one hundred gallons per minute. Four artesian wells at an average of 57,600 gallons to each, i. e., 40 gallons per minute would furnish running streams affording two hundred and thirty thousand four hundred gallons daily. In that climate, during seven months of the year, evaporation is rapid; hence it would be proper to protect the running streams from evaporation by appropriate sheds, or other suitable contrivances; but as more than half this water would be daily used, a proportionable diminution will take place in the quantity exposed to evaporation. The artesian wells will certainly be preferable, but should it, contrary to very great probability, fail, then there is still a sure resource which

Captain Pope has indicated in the following passage:

"The upper surface of the Llano is very gently undulating, and contains many shallow basins, which fill with water during the rainy season—the months of August and September. The basins are so shallow, and so large a surface of water exposed to evaporation, that these ponds are dry during a great portion of the year.

"It would be easy to dig wells or tanks in the beds of the lakes, and by conducting into them ditches and drains, all the water which falls upon the surface—a very large supply—would be accumulated. \* \* \*

"Wells, also, dug at any part of the plain, would supply water, which has percolated through the loose permeable soils, and which is retained by the impermeable stratum of limestone below. The average depths of such wells would probably not exceed sixty feet, although at some points it might reach one hundred and fifty."

Having now disposed of all the Governmental Eastern surveys of the route, so as to exhibit a fair view of that from Fulton, their eastern terminus, to the Pecos, we pass on beyond that, after a single remark.

From Fulton to the eastern border of the Llano Estacado, is 485 miles, 370 of which are wooded.

The Secretary of War's Report gives us a clear and beautiful summary (pages 29, 30, and 31,) of this line from the Pecos river, (western verge of the Llano Estacado,) San Diego and San Pedro. We now give the extracts just indicated from the Secretary of War's Report:

"Between the Pecos and the Rio Grande, 163 miles, three mountain chains rise from the table lands—the Guadalupe, Waco, and Orgon mountains. The Guadalupe mountain is crossed without a tunnel—elevation of summit, 5,717 feet, and with a grade of 108 feet to the mile, for 22 miles. A high viaduct and heavy cutting and filling for three miles near the summit, form the costly and difficult part of the pass. The Waco pass is still more favorable, the greatest grade being about 80 feet to the mile—the elevation of the summit, 4,812 feet. The Orgon mountain is turned just before reaching the Rio Grande at Molino and El Paso.

"A peculiarity of the mountains in the western part of the continent in this and other latitudes, is that they have no intervening, deep, secondary valleys between the main chain and the plains. Over the usually uniform and smooth surface of these last, the general elevation of which, between the Pecos and the Rio Grande, is from 4,000 to 4,500 feet, the valley of the Rio Grande is attained near Molino at an elevation of 3,830 feet, and at a distance of 787 miles from Fulton.

"The region between the Rio Grande and the Pecos village, on the Gila, just above which point the latter leaves the mountain region, may be described as a great plain, interrupted irregularly and confusedly by bare, rugged, abrupt, isolated mountains or short ranges, around or through the passes in which a railroad may be constructed with quite practicable grades. \* \* \*

"In one case, deep cutting in rock, or a tunnel near the surface, at the summit, with heavy side cutting and high embankments for short distances; and, in the other, a short cut of 60 feet, probably through rock, are proposed by Lieut. Parker, to attain grades of

46 and 90 feet per mile, or less by increasing distance.

The great difficulty experienced in crossing this district is in the long distances over which no water is found at certain seasons. The survey by Lieut. Parker was made at the driest season of the year, and, irrespective of the springs found at intermediate points, the whole distance between the two rivers, Rio Grande and Gila, may be divided into five spaces, ranging from 80 to 53 miles in length, at the termination of which large permanent supplies of water are found at the most unfavorable season of the year.

These spaces and points are:

|  |       |
|--|-------|
|  | Mile. |
| From the Rio Grande to the Rio Mimbres.....                  | 71    |
| From the Rio Mimbres to the stream of the Valle de Sauz..... | 72    |
| From the Valle de Sauz to the San Pedro.....                 | 80    |
| From the San Pedro to Zucson.....                            | 53    |
| From Zucson to Gila.....                                     | 79    |

"Not counting the stream of the Valle de Sauz, the distance from the Rio Mimbres to the San Pedro is 152 miles; which distance is not so great that railroad trains could not cross it without water, special arrangements having been made for the purpose. But this is the worst aspect of the case. At other seasons the supply of water is more abundant, and lakes and ponds are formed upon the plains, which may be drained into tanks; and the geological formation is such as to indicate the existence of sufficient supplies of water beneath the surface, which may be brought to it by artesian wells.

"The line proposed by Lieut. Parker leaves the Rio Grande near Fort Fillmore, 35 miles from Molino, and enters the valley of the Gila near the Pimos villages; this elevation above the sea being 1,365 feet. The route then follows this river to its junction with the Colorado, a distance of 223 miles with a general slope of 5 6-10 feet per mile. The Gila in this distance, flows through a plain with occasional mountains, ridges and peaks; its valley is highly favorable to cheap construction, from its generally smooth surface, and from not being liable to freshets.

"From the point now attained, the nearest port to our territory is San Diego, but the passes of the intervening coast range are very difficult, if not impracticable, and the route is forced northward to San Geronio Pass. San Diego and San Pedro can be reached by lines of about equal length from San Geronio Pass. To the former, the first section of the route to San Louis Rey, (about 75 miles long,) would pass through a country generally favorable to the construction of a railroad—being a plain with numerous hills from 500 to 1000 feet high, irregularly distributed upon its surface, between and around which a road may be carried with favorable grades. Between San Louis Rey and San Diego, however, about 40 or 45 miles, the coast is cut into numerous, deep, intricate gullies by the drainage of the plain.

"To San Pedro, about 125 miles, the route lies almost wholly over the same description of ground as that constituting the first section of the San Diego route, and avoids the obstacles presented by the second. It is therefore assumed that the terminus of this route should be at San Pedro, the point which it has now reached. It may, however be proper to remark that San Pedro is an open roadstead, and would require the construction of a break-water to constitute it a safe harbor."

Mr. Gray in his report makes some able and eminently suggestive remarks. The route he proposes through Texas for the Texas



Railway, is about sixteen miles south—on the Llano Estacado—of the route proposed by Captain Pope. His delineation of the "Staked Plain," is in every particular like that of Captain Pope, except that he thinks there is more water on it, but agrees to the indispensable necessity of obtaining water by wells or tanks, which he pronounces entirely practicable. The reports of both these gentlemen are entitled to high commendation.—With respect to the division of the route from El Paso, speaking of his own proposed route, he says: "In this division of the Pacific Railway, the first portion of grading is from the Colorado river, over what is called the "Desert." The line proposed avoids the sand hills, and is upon firmer ground, almost levelled by nature for the track of a railroad. A small part is gravelly, and the balance alluvial soil, firmly packed, and for great distances smooth as a bowling alley. The estimate for graduation is much larger than is believed will be required for preparing the road-bed; but as it will be necessary to dig for water, full allowance is made. The balance, (120 miles to the harbor of San Diego,) is through the coast range of mountains. After rising to the summit at Weaver's rancho, near the head of the Santa Anna river, the country presents a plateau appearance, stretching off towards the Indian village of Temecule, diversified with hills and valleys, and parallel ridges nearly to the coast. There are steep and rough gullies and ravines that will require considerable cutting and filling, with a number of short bridges, culverts, &c. Minute examinations and surveys will be required to fix the most proper direction for the road from San Diego to the Messa, leading towards the San Gorgonio Pass, should a route less circuitous not be found. Though the knowledge possessed of this country, chiefly from personal examination, from San Bernardino and the Cajon Pass, to the boundary line of Upper and Lower California, does not warrant me in asserting that a more advantageous Pass through the coast range exists further south into San Diego, yet my firm belief is, that one will be discovered that must prove more expedient. A thorough instrumental survey of each ravine and gorge, will be required, in the neighborhood of Canizo Creek, leading to the summit of the mountains, which circumstances have not permitted to be made. The importance of this is shown from the fact, that by a practicable railway passing this direction, it will be but about 175 miles only from the Colorado river to San Diego, allowing for all detours; shortening the line by way of San Gorgonio Pass (260—175) 85 miles."

Mr. Gray, after some other remarks, observes: "The San Gorgonio Pass is undoubtedly the doorway to the coast at that point, and the most direct to San Francisco. The original cost also from the San Gorgonio Pass to San Pedro, will be far less in graduation and masonry, than from the same point to San Diego."

But the question here about the Pacific terminus in Southern California, is one of detail, which will undoubtedly be settled in due time, and the utility of the railway, and superiority of the route, will not be affected when that question shall have been determined.—*New Orleans Delta*, Dec. 2, '55.

The total distance, by railroad, from St. Paul's, in Minnesota, to Seattle, in Puget's Sound, will be 1,102 miles.

## RAILROAD TO CALIFORNIA.

### OVERLAND ROUTE TO THE PACIFIC.

*Extract from the Message of Governor Bigler, to the Legislature of California.*

#### PACIFIC RAILROAD.

The rapid progress which has, during the past year, been made in developing the vast and unequalled resources of the Pacific country, together with the evident fact that additional population alone is required on this coast to give it still greater prominence in the eyes of the world, and immensely to augment the national prosperity and wealth, has called forth from our people a universal demand for the speedy construction of a thoroughfare across the continent, connecting the Atlantic and Pacific oceans.

The growing importance of California—the wants of her people, and the requirements of her fast augmenting commerce, would seem to demand the consideration of the Federal Government, and that prompt, decisive, and judicious legislation which should ever characterize its action in matters involving the national welfare, or the prosperity of the individual states.

That it is peculiarly the province of Congress, at least to lend a helping hand to this vast undertaking, uniting with bands of iron, and the more indissoluble bonds of a common interest, the extremes of our mighty confederacy, few will deny. Forming a part of the same free republic—having a common interest in the affairs of the nation—partaking of the same blessings, and submitting to the same burdens—enjoying identical institutions, with similar laws and language, and firmly united in feeling with our sister states, the people of California are yet more widely separated in distance from the parent government, than they are from the Empires of China and Japan. With all their wealth, free institutions, commercial importance and mineral resources, they are at this time, on a far off coast, beyond the protecting arm of the General Government, and, in case of war, are left entirely to their own resources to defend their hearths or repel aggression. With our national fleet at a distance of fifteen thousand miles, an army of rescue would be compelled to travel through a foreign country, or traverse an unpeopled waste across a continent, with stores, munitions of war, and artillery, ere we could receive succor in case of invasion. It is a wise maxim, and one now especially worthy of consideration, which teaches governments "in time of peace, prepare for war," and it is the part of true wisdom for the General Government to attend to the wants of our people in this respect ere their necessities shall demand it, or the threatened safety of the youngest and brightest star of the confederacy, show the fallacy of the procrastination which has already been felt too long, and which, in the end, must redound to the injury of California, if not irreparable loss to the Union.

The time has at length arrived when our people can no longer brook delay, and when renewed and constant exertions on our part are eminently demanded, to press upon Congress the importance and necessity of an early completion of the Atlantic and Pacific Railroad.

It is true, that now, while all Europe is trembling on the verge of an interminable warfare, and while her battle fields ring with the clang of arms and the roar of artillery,

while thrones, principalities and kingdoms rock with internal discord, and mutterings of popular outbreak are heard on every side, we are calmly enjoying the blessings of continued peace, and in plenty and prosperity reveling in the fruits of abundant harvests and peaceful pursuits.

But we know not how long this happy state may continue; how long we may be exempt from the ravages of foreign war, or how soon a combination of the great powers of the earth may wreak vengeance or envy upon our own people. Standing in the vanguard of nations in commerce, civilization and enlightened progress; in agriculture, manufactures, arts, literature, and science; in all that elevates the man, dignifies the race, or makes renowned a people, it is our duty, which prudence, if not necessity, should dictate, to be prepared for any emergency; to be ready as well to meet an enemy at the threshold, as to give succor to a friend.

While we, with hospitable arms and generous liberality, extend an invitation and kindly greeting to the downcast and oppressed of every land, and offer a home and protection to those who seek our shores to share our privileges and burdens, and enrich the state, we should not, in the days of prosperity, forget, that in the course of events, and from the very necessity of things, we, too, may be called upon to defend our honor and our homes against the aggressions of an invading foe.—It is needless for me to say that in such an event, in our present condition, California would be entirely unable to protect herself. With an open and almost unprotected seaboard, of seven hundred miles in extent, her cities from north to south, would be liable to capture and destruction, ere succor could reach these shores; her people could be harassed, their property destroyed, their commerce, domestic and foreign, completely annihilated, and a sufficiently powerful armament could, for a time at least, terminate the political existence of this, the brightest gem in the galaxy of states.

To avert so dire calamities, and, also, to foster and extend our varied commerce, to advance our prosperity, and to add to the glory and wealth of this young state, as well as to promote the dignity, importance and welfare of the whole Union, is the province and the duty of the Congress of the nation. In no way can this so well be accomplished,—in no way so many blessings vouchsafed and insured, or evils untold averted, as by the speedy construction of a great national highway from the Mississippi to the shores of the Pacific.

But the benefits of this enterprise, although important to California, will not be confined solely to her, and it is not alone on her behalf that we urge the measure upon the consideration of Congress. The railroad across the continent is a great national work, eminently worthy of the enterprise, industry, wealth and energy of this great Confederacy.

Its magnitude and utility to the whole Union, embracing, in its branches, every section of the country, and uniting with iron bands the outermost portions of a mighty empire, render it a proper object for the exhibition of the powers and resources of the United States, and when once completed, will forever remain a monument to the intelligence, progress, wisdom and energy of the nineteenth century.

As a thoroughfare for the certain and speedy transportation of the mails, munitions of war, and emigrants who may desire to find a



new home on the Pacific, as well as to increase the facilities required by the commerce of the world, and that frequent and safe intercommunication and friendly interest necessary between the people of the same great confederacy, this road is demanded by every consideration of justice, necessity and propriety.

In the consideration of this truly important question, it should be borne in mind that this young giant republic, with its three millions of square miles of territory, extending from ocean to ocean, over a space of twenty degrees of latitude, (being nearly one million square miles more than the Russian possessions proper) with its twenty-six millions of inhabitants,—with its unequalled resources of wealth, and all the elements of true greatness, has no national highway, no grand thoroughfare extending across its compact territory; in truth, has no reliable means of transit for its mails, munitions of war, or troops, from one portion of the continent to the other.

In order to remedy this great want, now beginning to be felt as a necessity by our people, I regard it as the duty of Congress to provide at an early day for the building of the road, and if necessary, to lend the name, credit and territory of the nation in assisting in its speedy completion. So far as the construction of the road by Congress is concerned, I deem it proper to state, that I regard the Atlantic and Pacific Railroad as a necessity of the age, as a great national enterprise, and that the constitutional power of Congress to provide for its construction through territory *exclusively under the jurisdiction of the Federal Government*, by the donation of alternate sections of such territory, or, if necessary, by the appropriation of treasure from the coffers of the nation, cannot be questioned. The refined distinction advanced by some, between the donation of lands, and the appropriation of money derived from the sale of those lands is, in my opinion, not authorized by any principle of constitutional construction, nor can it be derived, either expressly or impliedly, from the language, context, or tenor of that instrument. With reference to the great question of internal improvements, I desire here to state, that the position taken by the framers of the Constitution itself, and by the great lights who followed them, whose names and deeds are now history, as understood by me, has always been that Congress possessed the constitutional power to commence, carry on and complete, with the public funds, if necessary, each and every work, *national in its character*, and which is requisite to advance the prosperity, and provide for the *common defense and general welfare* of the whole people.

In a word, the line of distinction drawn is between a system of internal improvements for the special benefit of individual states, and those larger more extended, and important enterprises which embrace in their nature the well-being of the whole nation—these national undertakings which are necessary to preserve its unity, defend its outposts, and provide for the protection and fostering of its extended foreign and internal commerce. As such a work, the Pacific and Atlantic Railroad pre-eminently deserves to receive the aid and care as well as the resources of the nation.

In conclusion of this highly important and interesting subject, I would simply remark, that in my opinion the most advisable plan to secure the early completion of this

great work, would perhaps, be the donation of alternate sections of land on the route selected, and if need be, the lending of the name and credit of the nation, with a lien upon the road itself, as security for the payment.

The first would not only be amply sufficient in a short time, to raise funds to complete the road, but would greatly enhance the value of the alternate sections reserved by the Government, so that while the country now unpopulated would be opened up to the industry and enterprise of our people, the revenue of the nation derived from the sale of these lands would not be diminished, but actually increased. The latter would perhaps be necessary to begin the work and assist in its speedy completion, and would assuredly secure the government from loss.

#### OVERLAND ROUTE TO CALIFORNIA.

In connection with the subject of the Pacific and Atlantic Railroad, and as the most speedy and practicable plan of rendering facilities to immigrants, in their long and hazardous journey to California, I desire to renew the recommendation contained in my last annual message, relative to the establishment by Congress of a sufficient number of military posts along the entire route between the Western frontier and the Pacific to afford ample protection to immigrants against the aggressions of hostile Indians, and also stations where needful supplies could be obtained.

As the time expended in the discussion of the project of the railroad, the survey and location of the route, together with necessary explorations, will, in all probability, delay its final completion at least several years, I desire to invite your attention to the recommendation made to your immediate predecessors, and to express the hope that you will at an early day, in some appropriate form, urge upon Congress the importance of increasing the facilities of overland travel to California, and of affording the protection and aid now so much required by immigrants to our shores.

In my last annual message, I remarked:—"The establishment and maintenance of a sufficient number of military stations, at intervals of seventy-five or one hundred miles, with fifty men at each post, it is believed, would afford the security required, and incur the expenditure of but a trifling sum, compared with the great and manifold advantages which would certainly result not only to California, but to the whole Union.

This plan, it is believed, would render overland travel secure, and augment immensely the population of California, by the immigration of families, at present so much required to add permanence and stability to our prosperity. Nor would the benefits derived from this plan be confined to California alone, for around each of these stations would gradually be formed a settlement of hardy and adventurous pioneers, and in a few years, from the protection and facilities thus afforded, the entire country lying between the Mississippi and Sacramento rivers would be thoroughly explored, and, I doubt not, discoveries made, not only developing the vast mineral and agricultural resources of that immense tract of land, which is now an almost unbroken wilderness, but also clearly and unmistakably indicate the shortest and most practicable route which can be constructed the great highway of nations—the Pacific and Atlantic Railroad.

This subject is regarded by me as one of

vast importance to California, and as the forerunner of the railroad, and the precursor of a speedier and safer means of communication, the establishment of military posts by the military government, and completion of a wagon road across the Sierra Nevadas, by our own people, is eminently worthy of your most earnest consideration and immediate action.

#### A BILL

Providing for an Overland Mail from some point on the Mississippi River to San Francisco, Cal.

*Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled*, That the Postmaster General be, and he is hereby, authorized and directed, after the usual advertisement, to contract with the best bidder, in point of time and amount of compensation, for a tri-weekly mail service, from some point on the Mississippi river, to be designated by the Postmaster General, to be carried in four-horse coaches, through the territories of the United States to San Francisco, in the State of California, for the term of four years from and after the time of the commencement of the service, which shall not be more than one year after the proposals are made and accepted: *Provided*, parties will propose and contract to transport such mail between the points named within nineteen days during the first year of service, within seventeen days during the second year of service, and within fifteen days thereafter, and for the sum of not more than two hundred and fifty thousand dollars per annum; and in the event of a failure to make one trip, within the time named as aforesaid, an amount shall be deducted from the gross sum payable to said contractors equal to the proportion thereof, payable for one trip.

SEC. 2. *And be it further enacted*, That the said contractors shall have the right to open a road upon such route as may be selected, and to use the same, and to construct bridges, sink wells, and to do such other acts as may be necessary to render such road a good common road; and the said parties so contracting are authorized to expend, in grading said road, in the construction of necessary bridges, and in the sinking of wells along the route so selected, and in the territories of the United States, a sum of money, for and on account of the United States, not to exceed one hundred and fifty thousand dollars, for which said contractors shall take and preserve evidence and vouchers satisfactory to the Postmaster General; and the said contractors shall be entitled to have and to hold, in their own right, for which patents shall be issued to them, any unimproved and unappropriated lands of the United States, not exceeding one hundred and sixty acres in each, along the said line through the said territories, which may be required by them for stations or other purposes necessary for the maintenance and use of the said road as a post road; *Provided*, such stations shall not be nearer than ten miles to each other.

SEC. 3. *And be it further enacted*, That no letter or package shall be carried in this mail exceeding eight ounces in weight; and the weight of the mail and contents carried shall not exceed three hundred pounds, unless directed by the Postmaster General; and in case of such increased weight, the compensation shall be increased pro rata. And the President of the United States shall cause to be established and maintained, at convenient



distances on the said post route, where the said road may pass through the countries occupied by Indians, such military posts as may be necessary for the protection of these mails.

#### ATLANTIC AND GULF R. R., GA.

A joint committee of the General Assembly of the State of Georgia, have reported favorably to the construction of a main trunk railroad across the southern portion of that State. The committee in their report, say: "They have, therefore, determined to establish the Eastern terminus of the road at a point near the intersection of the county lines of Appling, Ware and Wayne. This point will be, in round numbers, 80 miles, or less from Savannah, and 40 miles, or less, from Brunswick, and will enable both those cities to place themselves in communication with our initial point, quite as soon as any considerable portion of the main trunk can be brought into working order.

"From the point indicated, your committee propose that the road, except so far as engineering difficulties may require a divergence, shall proceed in a direct line to the Chattahoochee river, meeting said river at some point between the junction of the Flint and Chattahoochee rivers and Fort Gaines.

"The committee have thought it advisable to allow this large latitude, because, in the survey yet to be undertaken, motives for inclining to one side or the other, may present themselves of which we are not now in possession; and because, also, the legislation of our sister States of Florida and Alabama, and the progress and prospects of their public works, may have a material bearing on the selection of a site for our western terminus.

"The main trunk will not exceed 180 miles, and will pass through a country well suited to railroad construction, and abundantly supplied with timber."

The same bill provides that on the payment of the first instalment, of 20 per cent. on a private subscription of \$600,000, the Governor shall pay over to the company a like instalment on a State subscription of \$500,000. This leaves the balance of control in the hands of the private stockholders.

If we may judge of the sentiments of our people by the interest they manifest in the Pacific Railroad, we should say that they certainly regard it as the most important question now before them.

#### SOUTHERN PACIFIC,

OR,

#### Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



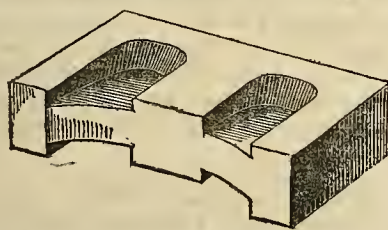
# CONKLIN'S PATENT SCIENTIFIC BRICK.

[From the Railroad Record, Cincinnati.]

## CONKLING'S PATENT BRICK—NEW AND SUBSTANTIAL BUILDING MATERIAL.

There is no class of improvements of greater value, or more general importance than those which relate to improvements in materials for building. And there are also none which has received so little scientific investigation or attention from those more competent to make improvements in them, as this same class of building materials. Wood, stone, iron, brick and building blocks, made of sand and lime, have all been used, and it is still asserted that some other material must be found either cheaper or more durable.—Now, while considerable attention has been bestowed on the selection of material, little advance has been made in the *form* in which that material has been used. Bricks, for instance, of the present day, are substantially the same as the bricks of the pyramids; they are simple parallelopedons of clay made hard by the action of fire.

Now the improvement, the name of which stands at the head of this article, consists in giving to the material a better form to secure uniform hardening in the kiln, and at the same time to obtain the means of cementing the wall with perfect certainty. The form of the brick, as shown in the accompanying cut,



in general appearance resembles the common brick; the back edge is hollowed in the form of a curve, and on the upper and lower sides are dove-tail indentures also of regular shape. Now, it is easy to see that when a wall is laid up with these bricks, and grouted well with good mortar, it becomes a solid mass of great strength and compactness. It will also be seen, that with these peculiarities the bricks in the kiln are exposed more fully to the action of the fire than the ordinary brick can by any possibility be. Hence they are rendered hard through their entire substance.

**MANUFACTURE OF THE BRICK.**—The manufacture of the improved brick requires no greater skill nor labor than that of the ordinary brick. For common *mould* brick, the

cavities are made only on the lower side, but deeper. Hence the ordinary mould, with pieces of wood of suitable shape placed on the bottom, is all that is required. The clay of proper consistency is forced into the mould as usual, and smoothed at the top with the ordinary scraper. For *pressed* brick, the cavities may be made either on one or both sides of the brick, as may be desired.

The burning of the brick is performed in a kiln as usual. But as the cavities of the brick admit the hot air thoroughly to every portion of the substance, there is less liability to warp and shrink unequally. The cavities aid the action of the fire in the interior of the brick and consequently materially reduce the time of burning. A saving of full *twenty per cent.* in the amount of fuel is thus obtained. Thus brick may therefore be made *cheaper and more uniform in shape and density* than ordinary brick.

**LAYING THE BRICK.**—The improved brick are laid in the usual manner, breaking joints, with as thin a layer of mortar between the courses as can be put there, and grouted well with good mortar. They are laid as expeditiously as common brick and much more so than fine front brick when well pointed. The cementing of the wall by the grouting filling up, the dove-tail cavities being thus scientifically provided for, there can be less deception in making perfect joints, than with ordinary material. The grouting of common brick is always liable to imperfection, owing to the spreading of the mortar in the thick joints and stopping the flow of the grout. This cannot be the case with the improved brick, as the spaces are of sufficient size to prevent such an accident.

The appearance of a wall laid with these brick is much finer than that of one laid with common brick. The brick being of uniform shape and size, and laid with thin courses of mortar, gives a much more regular and handsome appearance than can be obtained with the best quality of ordinary brick.

A saving of ten per cent. of material is thus accomplished, by which a larger quantity of brick can be made from the same amount of material and a considerable reduction effected in cost of transportation, where bricks are exported.

**ECONOMY OF ROOM.**—Among the most important advantages of these brick, may be mentioned the great solidity of the walls built

of them, and consequent economy of room. Walls built of this material are fully *one-fourth* stronger than those built of common brick. Hence *one-fourth the room* occupied by walls of ordinary brick can be saved by the use of the improved brick. This in large cities, where ground can only be bought by covering it with gold, is an object of the first importance.

**DURABILITY OF BUILDINGS.**—One of the cause of waste and delapidation and consequent loss in ordinary buildings is the action of the weather on the thick mortar joints of the brick walls. This is entirely obviated by the improved form of the brick. The uniformity of sizes and shapes enables the mason to make the thinnest possible joints, and consequently gives the least possible opportunity for waste by rain and frost. The millions of capital now invested throughout our country in brick walls, unscientifically constructed, which are constantly crumbling from the action of the weather, are just so many millions of lost capital every twenty or thirty years. These millions may be saved by the use of more substantial and durable materials.

**SAFETY FROM FIRE.**—One of the great causes of loss by fire is the imperfect cementation of walls. In laying ordinary brick the mason often carelessly leaves large spaces unfilled with mortar, and that too, not unfrequently around the flues of the chimneys.—These defects are of such a nature that they cannot be discovered after the wall is erected. The result too often shows itself in the burning of the best and most elegantly constructed mansions.

Such being the character of this improvement, it is obvious that the best buildings will ultimately be constructed of this improved material, both on account of durability, finish, cheapness and safety. Master Masons and Carpenters purchasing county rights will thus be able to control the erection of the best and most profitable buildings in the counties where they reside, and thereby secure contracts, which they could not otherwise obtain.

The patentee of this valuable improvement is Edgar Conkling, Esq., of Cincinnati, office 106 west 4th street. Parties wishing further information will please address the patentee, enclosing postage stamp to pay postage on circulars giving full information.



## Improvement in Bricks.

Mr. Edgar Conklin, of Cincinnati, Ohio, has lately obtained a patent for an improvement in the form of bricks, which promises to be of some importance. The accompanying engravings are illustrative of the invention.

The objects of the improvement are to secure greater beauty in the exterior appearance and

finish of fronts, and also to render brick walls of all descriptions more secure than they are at present. This is done by a peculiar formation of the bricks which facilitates the use of grouting, cement, or soft slush mortar as a binding in place of the common rough mortar. Grouting is a thin, watery kind of mortar, which, in time becomes exceedingly hard and firm.

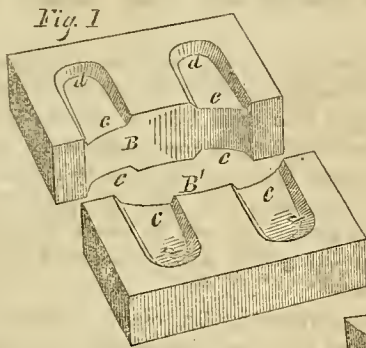


Fig. 2

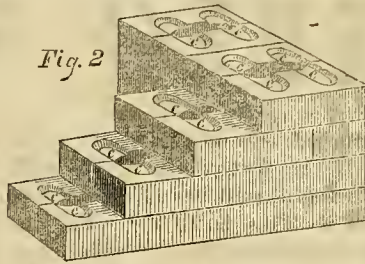
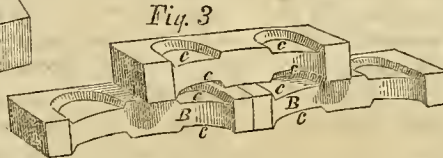


Fig. 3



In the annexed engravings, fig. 1 shows the form of the improved bricks separately; fig. 2 exhibits their appearance when laid in a wall; fig. 3 is a section of wall.

The inner edges of these bricks, B, are made a little concave. The surfaces are formed with cavities or depressions, c, the back parts of which at d are the deepest. Except the depressions named, the surfaces are made flat in the usual manner, and come in contact, when put together, like ordinary bricks. In wall laying, the top surface of each course is to be washed over, by means of a white wash brush, with a thin coat of grouting or cement, or a thin stratum of slush mortar may be laid on. Grouting is then poured into the interstices, which, in consequence of the openings formed by the cavities in the brick, has abundant opportunity to circulate among them, and as its nature is to solidify it forms the strongest kind of a binding. It is to be particularly observed that the grouting is confined within the wall, and, therefore, is not, like common mortar, exposed to the weather. In putting up house fronts, no pointing is required to be done, and no disfigurement to be covered up with paint, is occasioned; on the contrary, the front ever presents the same unbroken smoothness and beauty.

The inventor thinks that walls may be laid in less time with this improved brick than with the common kind, and that in addition to the gain in time, there will be a saving in the expense of mortar; the latter article may be used, however, if found desirable. He also believes that by reason of the greater strength in the mode of binding, an important saving in the number of bricks will be effected, since walls necessary to sustain a given pressure will not require to be built so thick as at present. It is conceded by some masons, that a 12 inch grouted wall is equal to one of 16 inches mortar laid.

We are told that there is no difficulty either in the moulding, pressing, or burning of these improved bricks, and no increase of expense.

If the usual care is taken in sorting out from the kilns, the proper proportion of bricks that are sufficiently true and even for fronts will generally be found.

It is said that exposed walls must be taken down and relaid at least once in a generation, in consequence of the crumbling and destructive effects of the weather upon mortar. Such objections, it is believed, cannot exist where the present improvement is adopted.

We might mention other interesting particulars, but space forbids. Further information can be had of the inventor at Cincinnati. His patent bears date Jan. 8, 1856.

[From the Life Illustrated, New-York.]

### New and Improved Brick for Building.

The new brick which is being so extensively noticed by the leading journals is well represented by the engraving. It was invented and patented by Edgar Conkling, of Cincinnati, O., on the 8th of January, 1856. There are few improvements which create a more general interest among all classes than those relating to modes of cheapening and beautifying our habitations.

Comparatively little has been heretofore accomplished in this direction. Mr. C. seems to be taking a step in advance in presenting this valuable article to the public.

This new form of brick, and the mode of constructing the wall of which it forms a part, may be briefly given as follows:

In the engraving, fig. 1 is a perspective of two bricks; fig. 2 shows the manner of laying the bricks to construct the wall, and fig. 3 is a like view of three bricks laid in their ordinary position. The back edge of these bricks is hollowed in the form of a circle, as seen at B in the engraving; and the sides have depressions, as shown at c, d; d being deeper than c, in other respects the external surface does not differ materially from those of the ordinary kind. The object in making a greater depression at d than at c is, to give the requisite form to the mortar or cement, so that upon its becoming hard, it

will interlock the brick by a kind of dovetail joint. Each side of the wall will be thus firmly bound to its opposite part, giving a much more firm structure than by the usual method, and nearly as firm as if constructed of one solid material.

It will be understood that the interstices formed by the cavities in the brick are filled after the brick are laid in a fine soft cement. The liquid mortar being poured, hardens within the wall in a position not exposed to the action of the atmosphere, which would otherwise, after a series of years, dissolve and destroy the cement. These bricks may be moulded with equal ease and rapidity to those of the ordinary manufacture; and the expense of "setting" and burning in the kiln is considerably lessened by this process, the brick being so formed that the fire passes more uniformly through all parts of the kiln, and thus secures a more perfect burning and consequent hardening of the brick. It will, therefore, be an object for brickmakers to manufacture the improved brick in preference to those now in use. It is claimed that a saving of at least twenty-five per cent. is effected in the amount of fuel used to burn a kiln of the improved kind. It is our opinion that a greater saving is effected in the "setting" of the kiln than in the quantity of fuel consumed.

Such being the character of this improvement, it is obvious that the best buildings will ultimately be constructed of this improved material, both on account of durability, finish, cheapness and safety. Master masons and carpenters purchasing county rights will thus be able to control the erection of the best and most profitable buildings in the counties where they reside, and thereby secure contracts which they could not otherwise obtain.

The fine, smooth brick so extensively exported from Milwaukee, Wis., to our city, would be much enhanced in value could this improved form be added to their present good quality. Our numerous manufacturers upon the Hudson will also do well to look to the advantages offered by Mr. Conkling for furnishing the New York market with a better article than they have heretofore done. For further information address the patentee at 106 West Fourth Street, Cincinnati, Ohio.

[From the Pen and Lever, Washington, D. C.]

### Conkling's Improved Brick.

A patent was granted, January 8, 1856, to Edgar Conkling, of Cincinnati, Ohio, for an improved form of brick. We have seldom seen an invention, so simple in itself, which appears to present so many features of improvement. The inventor claims for it, lessened cost of manufacture, greater strength, durability, and beauty of walls made therefrom, and at a reduced cost, economy of room, where space is an object of importance, increased safety against fire, and other minor points of superiority.

In the accompanying engravings, Fig. 1 represents a single brick in perspective; Fig. 2 is a cross section of four of the bricks laid together as in a wall, the section being through the center of the cavities, in the sides of the bricks; Fig. 3 is a top view of a portion of a wall, showing how the cavities and concavities



come together in building. Like letters designate corresponding parts in the several views.

The invention consists in forming cavities *a*, *a*, in the sides of the bricks in connection with a concavity *A*, in one edge. The ends and one edge remain the same as those of an ordinary

brick. The cavities *a a* reach from one edge nearly, but not quite, to the opposite edge, and deepen toward the closed ends. Thus, when one brick is placed upon another, a space of dove-tail form, is left between them, as seen in Fig. 2. At the ends of the brick, outside of the

Fig 1

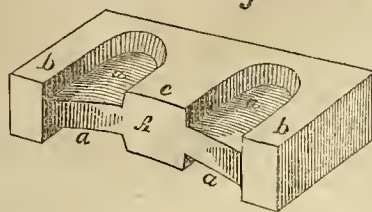


Fig 2

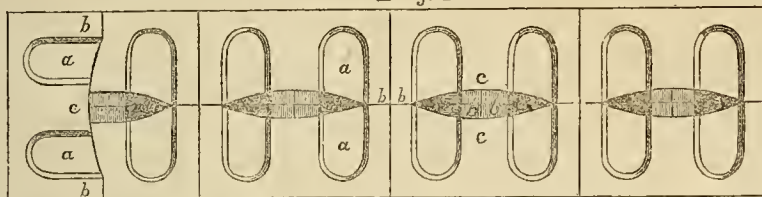


cavities, portions *b, b* are plane, and of the full thickness; there is also a portion, *c* between the cavities, plane, and of the full thickness. The width of the portion *c* is double that of each of the portions *b, b*, or equal to that of both, so that in breaking joints of contiguous courses, the cavities will be brought directly over those beneath. Thus, with an ordinary brick, eight inches in length, the width of the portions *b, b* may be one inch each, and that of

the portion *c*, two inches, leaving each of the cavities two inches wide.

When the bricks are laid in the walls, the plane faces are laid outside, so that they present an appearance precisely like an ordinary brick. But in the middle of the walls, between adjacent bricks, elliptical spaces are formed between the edges by the concavities. This is clearly shown in Fig. 3. It will be seen that in breaking joints, a considerable portion of

Fig. 3.



these spaces are covered by the next course, but that there are portions at the ends of each, that come exactly over and under those below and above, as seen at *A*, in Fig. 3. These portions of the spaces constitute direct and uninterrupted, vertical passages through the wall.

The bricks are first laid with the least practicable quantity of mortar, only just sufficient to lay the bricks even and level, and to tighten the joints between. Then, after a convenient number of courses has been laid, thin cement, or grout, is poured down through the spaces *A*, from which it spreads out and fills all the cavities *a, a*. When this grout hardens, it constitutes vertical columns of solid cement, in the spaces *A, A*, united between the courses, and branching out laterally with dove-tail projections into the cavities, *a, a*. This renders the wall exceedingly firm and compact, the dove-tail form of the cavities and of the cement within them, rendering it difficult for single bricks to be moved separately.

Thus the wall presents a much handsomer appearance than usual, since the bricks are almost in contact, and show little or no pointing. The compactness and the interweaving of the cement and bricks, produce a wall of such increased strength, that the width of one brick may be dispensed with, when exceeding eight inches in thickness, as ordinarily built, whereby economy of construction and more space for the rooms inside are obtained. The closeness of the bricks outside also prevents the penetration of moisture between them, so that buildings less subject to dampness are produced, and

the mortar and bricks will not become disintegrated, and thereby crumble, as walls are now so liable to do. A similar impenetrability to fire is also attained, rendering it safer to build chimneys of these bricks; as it is known that many losses by fire are caused by crevices carelessly left by masons between bricks, on account of the great thickness of mortar used between the courses.

These bricks are moulded as easily as the common bricks. In ordinary moulding, the cavities *a, a* need be only in one side, and be formed by means of suitable projections in the bottom of the mould. Pressed bricks may as easily be made with cavities in both sides as in one side.

The inventor states that the burning of these bricks requires twenty per cent. less fuel than other bricks, for the reason that the cavities make the substance of the brick thinner, and thus more easily allow the heat to penetrate, and to do its work more speedily and effectually; and for the further reason, that a freer circulation of heat through the kiln is afforded; and as the heat penetrates the bricks more uniformly, they do not warp so much nor shrink so unevenly.

So many advantages, which appear obvious and reasonable, should attract the notice of brickmakers, masons and builders. Those desiring to purchase rights, or to make inquiries on this subject, would do well to address the inventor. We refer them to Mr. Conkling's advertisement on the last page.

[From the Plough, Loom and Anvil for February.]

A patent has been secured by Mr. Edgar Conkling, of Cincinnati, O., for a new form of brick. Several plans have been devised of late for securing strength to brick structures. Bricks of the ordinary form have, of necessity, a considerable space between them filled by mortar, and yet exposed to the weather, and severely acted upon by rains and frost. These bricks are constructed with apertures in the interior of the wall though upon the surface face of the brick the mortar is thoroughly defended from the force of storms, while it also gives an increased strength to the wall in resisting lateral pressure. The wall thus built is perfectly solid, while the bricks are laid close to each other, and yet are firmly bound together by a sufficient quantity of mortar. Models of these bricks may be seen at this office.

We commend this invention to the attention of builders, and shall be happy to aid them in making experiments with them to their satisfaction. We shall probably have more to say of these bricks hereafter.

The subscriber offers for sale, by State and County rights, the right to manufacture and use his "Patent Scientific Brick."

The foregoing adequate description of its numerous advantages from such competent sources will suffice to satisfy the Brick Maker, Mason and Builder that their mutual interests will be promoted by its adoption. The Brick Maker, producing a cheaper, harder and better formed brick. The Mason in promoting the interests of his trade, in preventing the superior advantages offered by other materials over the ordinary form and quality of brick, for durability and appearance, displacing the use of brick. The small progress heretofore made by Masons in this branch of their trade, has tended materially to the use of other materials, by other mechanics who progress with the age. And the Builder, in securing greatly increased strength, durability and appearance. The principle involved is adapted to a much larger brick, especially of double thickness to avoid joints, and the cavities modified in form, to one or both sizes as desired.

Competent and well recommended Agents for responsibility and moral character, will be Commissioned to sell rights.

Address, Patentee, 106 West Fourth Street, Cincinnati, E. C.







# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, MARCH 10, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, . . . . . EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, . . . . . MONDAY, MAR. 3.

### CONGRESSIONAL PLAN OF CONSTRUCTING THE PACIFIC RAILROAD.

We believe that a large majority of Congress, and certainly of the people, desire a Pacific Railroad, and not only desire it, but desire to furnish such means, or such inducements as will really and practically make the road. But, there stands in the way *two* great difficulties. The first is, that there are *three* contending routes; and it is essential to have some compromise and understanding on the subject. This can probably be done. But, after the difficulty of the routes is over, there arises another yet more serious. It is, that Congress, not knowing much about the management of private capital and the construction of Railroads, will make such *details and conditions*, in their grant of aid, as will utterly drive off capitalists from the acceptance of these conditions. Congress, inspired by some dread of being cheated by corporations, will higggle about terms, and impose conditions which no private stockholders will submit to. Now the truth may as well be known, and met, in the first as the last place. The elementary conditions of eugaging private enterprise and capital in the work of making a Pacific Railroad, are these, viz:

1. To make that road will require an enormous expenditure of money—say in round numbers *one hundred millions*. Now this money cannot be got from private capital, except upon such inducements as will make it probable the company will make a profit.

2. These inducements cannot be given, by the Government, except, in either a *grant of lands* (which is the cheapest, and best way,) or by mail contract, or both. The grant of lands must be *good* lands, and they must be enough to make the greater part of the road,

3. The Government must not impose such conditions, as the deposit of a large sum of money, or forfeiture in a short space of time. Because, these conditions impair the value of the grant, and unless the company be one of extraordinary capital, will prevent its execution altogether.

Congress must know, that there are but *two* ways to make the Pacific Railroad.

1. To make it a Government work, and construct it with Government money.

2. To offer such *inducements to private en-*

*terprise* as will draw out the energy, and money, of individuals.

Now there are many men in and out of Congress, who think that if a large grant of lands is made to a company to make this road, the company will make large profits, and they immediately cry out "speculation!" &c. Well, what of it! Can a company of men on earth be found, to make a Pacific railroad without profits? Are any of the timid capitalists—of all men the most timid—to be drawn out in a scheme of doubtful profit? Not a dollar can be got in that way.

The true plan, and the one which will make the road immediately, is to offer profits, and liberal ones, by grants of land, which the Government cannot only spare, but will make the residue far more valuable, to American enterprise (no matter who may be the undertakers), and thus draw out the energy, talent and money of the country. If the land be granted, only as the road is made, the Government can lose nothing. They will either have the road, or they will not give their lands.

We have been led to these remarks, by the following report of a bill, introduced into the Senate, by Mr. Brown, of Mississippi:

WASHINGTON, March 6.

SENATE.—Mr. Brown introduced a bill for the construction of a Railway and Telegraph line, from a point on the Mississippi river, south of latitude 37° to the Pacific ocean. This bill grants about forty millions acres of land, for which the company is to pay 50c. per acre before obtaining the title; it also requires the company to deposit half a million dollars, as security that the work shall be done according to the provisions of the bill, and for the completion of one hundred miles within eighteen months; the Government to pay \$600 per mile per annum for carrying the mail until the road is finished, and for ten years thereafter, and such reasonable sum as the Secretary of war may determine for carrying troops and munitions of war: the work to be forfeited if not built within ten years, and all land paid for it, to revert, in that case to the United States. The bill grants the right of way four hundred yards wide, but gives no exclusive privileges, allowing any company to construct the road where and when it pleases, and to obtain such favors from the Government as it can.

The bill was referred to the Committee on the Pacific Railroad, and Mr. Weller from that Committee, said it would report, if possible, next week.

We have no doubt Mr. Brown desires the success of the road and would have no objection to its construction on the Texas route; but, it is obvious, that capital and enterprise cannot be drawn out on such a proposition.

1. The grant of land is liberal enough, in

quantity; but the *conditions* will nearly, or quite destroy its value. Supposing the road to be 2,000 miles in extent, the grant would be 20,000 acres per mile; but if these lands are to be (as they must be) selected *west* of the existing States; there they cannot possibly be estimated at over \$1 per acre, and that would be high. For these the company must *pay* the Government 50 cents per acre! This would be \$10,000 per mile, or twenty millions of dollars! No company could accept these terms with any probability of making anything, by the operation.

2. To deposit and keep half a million of dollars, *in Cash*, is more than any Railroad Company whatever can do; and at the same time go on constructing the road, and pledging themselves for fifty cents an acre on land.

4. The \$600 per mile is the only valuable grant in the bill, and this is not available in the *construction* of the road, when only money is needed.

In one word, this is an impracticable scheme. There are no speculators sharp enough to raise money on these terms. If Congress wants any Company of individuals to make that road, they must give them *something*, and not a mere shadow. The grant of land must be made, without being paid for, and it must be coupled with no impossible conditions; or the Pacific Railroad will wait for another generation. Does not Congress realize that a Pacific Railroad is a vast enterprise, and the risks and dangers to the undertakers are enormous?

It will be a great achievement and a vast benefit to the country, when a Pacific railroad is made; but, great as it will be, we no more desire, than do members of Congress, to see public grants made for the purpose of mere speculation. But, it must not be forgotten, in any fair consideration of this subject, that any parties, who will undertake that work, must raise a great capital, pass through great risks and encounter dangers well worthy of a munificent reward; and, no parties, with common prudence and common sense, will undertake it on any other grounds.

The present cost to an emigrant to California, by the inland route, is, on an average, from \$400 to \$500, and an expenditure of three to four months' time. Were the Pacific Railroad built, the cost, all told, from the Mississippi river, would not exceed \$150, and fifteen days of time. Let those who know the value of time and money estimate the worth of such a road.



### THE RAILROAD AGAINST WAR; OR, THE VICTORIES OF PEACE.

At a time when Europe is just ending a bloody war, which has already cost five hundred millions of dollars, and two hundred thousand men, it will be profitable to compare the achievements of Europe with those of America—the glory of War with the triumphs of Peace. If, after making this comparison, any one shall rise from the study, with a taste for war, we shall leave him to the enjoyment of its pleasures. In the first place, let us examine what amount of force and money Europe has employed either in carrying on war, or preparing for it, and compare that with the construction of railroads, in the United States. In other words, let us set the railroad against war.

*First, of war—glorious war!*

In the Year Book of Nations is an account of the Standing Armies of Europe, which we know to be nearly correct. It is as follows:

|                               |              |
|-------------------------------|--------------|
| Russia.....                   | 700,000 men. |
| France.....                   | 570,000 "    |
| Austria.....                  | 466,000 "    |
| Great Britain.....            | 127,697 "    |
| Prussia.....                  | 129,117 "    |
| Turkey.....                   | 173,600 "    |
| Spain and Portugal.....       | 120,000 "    |
| Sweden and Denmark.....       | 80,000 "     |
| Switzerland and Sardinia..... | 130,000 "    |
| German States.....            | 100,000 "    |
| Aggregate.....                | 2,541,774 "  |

Here is a grand aggregate of *two and a half millions of men*, employed for two objects; one, as a defense against each other; and the other, to keep down the people; in either case for war.

In Great Britain, soldiers cost about 80 cents per day; in France 40 cents, and in Austria 30 cents—that for everything. On an average, the soldiers of Europe cost about 50 cents per day, each. The cost of this vast armament, then, is about *one million two hundred and fifty thousand dollars per day*; or, more than *four hundred and fifty millions of dollars per annum!!*

Now, it will be inquired, *what* has this vast expenditure of men and money accomplished? It has accomplished nothing—but *debt, taxation, and destruction*. Nothing else! Some one may, perhaps, say—has not some one, or all these nations, gained by conquest? Not at all! Examine the map of Europe, and you will see, that no one of these nations has really gained anything by conquest in Europe. Great Britain has gained a great deal by conquests on other continents. Prussia has been consolidated out of smaller German provinces, and Poland was divided by fraud, not by conquest. Since the reign of Louis the 14th, the map of Europe has substantially remained unchanged. In substance, nothing whatever has been gained, in all the wars of Europe, and by all its vast armies.

Now let us turn one moment to the United States. In about seven years, the United States have made 21,000 miles of Railroad, or very nearly that; for before 1848, there was

but a small quantity. Now divide this into the seven years, and we have in each year about the following result, which compares very nearly with the actual construction of 1855.

|                                    |               |
|------------------------------------|---------------|
| Annual miles of Railroad made..... | 3,000         |
| Annual cost.....                   | \$100,000,000 |
| Annual number of men.....          | 100,000       |

Now take again the Standing Armies of Europe, and compare the annual results:

|                   |               |
|-------------------|---------------|
| Annual loss.....  | 100,000 men.  |
| Annual force..... | 2,500,000 "   |
| Annual cost.....  | \$450,000,000 |

Take these two results, and compare them in parallel lines, thus:

|              | The Railroad.    | War.              |
|--------------|------------------|-------------------|
| Work.....    | 3000 miles made. | 100,000 men lost. |
| Force.....   | 100,000 men.     | 2,500,000 men.    |
| Cost.....    | \$100,000,000    | \$450,000,000     |
| Results..... | Prosperity.      | Destruction.      |

To obtain a high commercial prosperity, by railroads, costs not a fourth of what it costs to keep two millions and a half of men, either idle, or in the work of destruction. After this picture, who can desire the glories of war? The United States have more miles of railroad than all Europe, and are continuing to make them with a rapidity of which Europe has no conception. These are increasing the growth and power of the country, at a rate which surpasses all the achievements of past civilization. The Military Army is almost nothing; but the Railroad Army is immense.

|                   |         |
|-------------------|---------|
| Soldiers.....     | 12,000  |
| Railroad men..... | 150,000 |

The United States are employing twelve times as many men in making railroads as they have soldiers; while Europe is employing thirty times as many soldiers, as railroad men! Where will Europe stand relatively to America fifty years hence, if it employs its strong laborers, as soldiers, while America employs hers in making railroads, building, ships, and plowing the land? In fifty years, all of Europe (if it keep its present policy) will not equal the United States in strength and wealth. On the one hand, *two and a half millions of able-bodied men* are employed in either demoralizing, or destroying the people; while these men, in the United States, are employed in some useful work, or productive industry. The victories of Europe have only wasted human blood upon the earth. The victories of America have made the earth fruitful and multiplied men upon it. War has devastated the earth. The railroad has multiplied men upon it. They are the contrasted types of different civilizations. Or, rather, war is barbarism lingering in civilization; and Steam Locomotion is driving barbarism out. It is too late in the day for civilized countries to be guilty of such an absurdity as war. Let us vote it—*obsolete*.

LAKE ERIE, WABASH & ST. LOUIS R. R.—The citizens of Logansport, Ind., have determined to celebrate with appropriate festivities the opening of this road to that place.

[From the N. O. Delta.]

### ON THE PACIFIC RAILROAD.

NEAR THE THIRTY-SECOND PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

NO. III.

In this article we shall consider the subject of fuel; the lumber necessary for constructing the road; show that the road is not sectional, but national in its character, and remark the general features of that part of the route from San Geronimo Pass to San Francisco. In much of what we shall say on part of these topics, we shall avail ourselves of the labors of Captain Humphreys, in his examination—a gentleman whose general accuracy of information and acute discrimination are conspicuous.

#### FUEL.

"Bituminous coal is abundant on the Brazos; the coal of Van Couver's Island, and also of Puget Sound, is excellent. Last Summer a cargo was brought to San Francisco from Puget Sound, at a cost of \$11 per ton—\$4 per ton being for freight, and \$7 per ton for mining and handling. It costs at present prices \$5 per ton to mine it. This at no distant period, will doubtless be reduced to \$1 or \$2 per ton, and it can be delivered at San Pedro or San Diego at \$7 per ton.—At San Diego it can be mined and got ready for transportation at \$1 per ton. From the Brazos to San Pedro is 1,400 miles; at three cents per ton per mile (double the usual cost), we have it at the foot of the Llano at \$7 per ton, and the mean cost per ton, over 1,200 miles, \$16."

"In regard to transporting wood for fuel for locomotives, as 1,300 lbs. of coal make as much steam as 4,500 pounds of pine wood, coal can be transported three and a half times as far as wood, other things being equal.

"The cost of fuel on railroads is about one-fifth of the yearly expense of maintaining and working the road.

"It may be found expedient to establish a depot of supplies at the mouth of the Gila, 255 miles from San Pedro."

#### SUPPLIES OF LUMBER AND TIES.

In page 79 of Captain Humphrey's Examination, he states the *most unfavorable case* that can arise is, that they must be brought from points of supply 1,400 miles apart.

"The greatest distance to which they must be transported from each end is, therefore, 700 miles by the road, the point of junction of supplies from the east and west, being about 110 miles west of the Rio Grande, lumber can, undoubtedly be procured from the Red River district for \$30 per 1,000 feet—the cost per 1000 feet. The additional cost for transportation to the Llano, 300 miles, by the railroad, at three cents per ton per mile, (double the usual cost on Eastern railroads), is 13½, and its cost there 43½ per 1,000 feet; the cost per 1,000 feet for 450 miles additional transportation is \$20; and hence the cost per 1,000 feet at this extreme point will be 63½. The mean cost over these 400 or 450 miles from the eastern limit of the Llano Estacado will be 52½ per 1,000 feet.—From Fultston to the Llano it is unnecessary to estimate its cost."

"Lumber may be delivered at San Pedro or San Diego from Oregon for \$30 per 1,000 feet. Abundance of it can be got out from



the San Bernardino and other mountains near the line of the road at that cost, and it may be assumed, therefore, to be supplied at San Pedro or San Diego, at that price, and at a mean cost over the road (this road supplying itself as it must do, sections of 40 or 50 miles being built at a time) of \$46 per 1000 feet. It would be desirable to have the ties sawed to the smallest dimensions, if they must be transported to the distances stated. The dimensions may be six inches by eight inches, and their mean cost over these 1,200 miles will be about \$34 per 1,000 feet, or the cost of ties per mile \$1,760. It may be found desirable to return to the use of stone chairs, or to resort to cast iron ties over this portion of the route. The latter would cost at Eastern prices about \$2 per tie."

The mean cost of rails, iron, &c., over this route will not exceed, if it equals \$30 per ton more than their usual cost in the Eastern States."

"The worst case having been discussed, it remains to say, that good ties and lumber can be obtained from the Gnadalupe and Waco mountains, from the head waters of the Rio Mimbres, from the Pinal Llcno, Selinas river and head waters of the San Francisco, and from the San Bernardino mountains of the Sierra Nevada, or coast range, which sources of supply may be found to materially obviate the necessity of transporting lumber from the two ends of the road."

We will now show that this is not a sectional road, as has been alleged, but truly national, i. e., affording as great facilities to as large a proportion of the actual population of the United States as any other route. In fact, the facilities are much greater for transportation on this road, because the line is one that will not be interrupted throughout the year. That of the forty-first and forty-second parallels would be clogged and probably stopped by snow from two to three months in the year; and this is the only line that can with plausibility pretend to competition with it. It is to be considered that it is *down stream* to this route—down the channels of the two greatest rivers of America, and all their numerous navigable tributaries. There are now constructing railways which will connect with Fulton in Arkansas, which place is 150 miles from the Mississippi river, and some point will be selected on the Mississippi, whither the freight will be borne either on the bosom of that river and its tributaries, or by the railroad which is in the process of construction along its western bank. The city which will become this terminus will be great and flourishing. Thus we see that a vast extent of the United States is deeply interested in this route. The area is immense, and the population of the States more immediately interested in it, and which would be more benefited by it than by any other route, amounts to the great aggregate, according to the last census, of 11,225,269. All the States, indeed, would be benefited by it. But adopt whatever route we may, some would be more benefited than others. Our estimate of the States to be benefited by this route is as follows, arranging them according to their proximity, and the population of the census of 1850. We throw off one million of the population of Indiana and Ohio, as it stood in 1850, and about five hundred thousand from that of Illinois, as it probably stands now, leaving in Illinois an amount of population to be benefited by it specially, fully equal to its existing population:

|                     |            |
|---------------------|------------|
| Texas.....          | 212,592    |
| Louisiana.....      | 517,762    |
| Arkansas.....       | 201,817    |
| Mississippi.....    | 606,326    |
| Tennessee.....      | 1,002,717  |
| Kentucky.....       | 982,403    |
| Georgia.....        | 906,185    |
| North Carolina..... | 869,039    |
| Florida.....        | 87,445     |
| Alabama.....        | 771,623    |
| Missouri.....       | 682,605    |
| Illinois.....       | 851,479    |
| Indiana.....        | 988,416    |
| Ohio.....           | 1,940,329  |
| California.....     | 92,597     |
| New Mexico.....     | 50,000     |
| Virginia.....       | 1,421,661  |
| Total.....          | 12,523,269 |
| Deduct.....         | 1,000,000  |
|                     | 11,523,269 |

This is about one-half of the entire population by the late census, and is quite as great an amount of population as will be particularly benefited by any route—while the general benefits are greater resulting from this route than from any other. The reasons of this are obvious. It can be worked without interruption; no snows nor ice obstruct it at any season of the year. Its cost to San Diego or San Pedro, is forty-seven millions of dollars less than by any other route. It is down stream to it from the two great rivers and their tributaries, and it is through regions of unsurpassed salubrity, its cost with the extension to San Francisco, is twenty-three millions of dollars less than that of any other route.

The Secretary of War, in his report, p. 36, says:

"The topographical features of this extension of the route are, with the exception of the mountains, favorable to cheap construction. The mountain passes are likewise of a favorable character, their only objectionable feature being their high grades. The nature and extent of this objection has been already stated, and, it is seen, is not serious."

"From Fulton to San Francisco the distance is 2,039 miles, the sum of the ascents and descents, 42,008 feet, which is equivalent to 795 miles; and the equated length of the road is 2,834 miles; the estimated cost is \$93,120,000."

The salubrity of the route is a consideration of very great importance. To avoid the dangers of the sickly route by Panama, is one of the strong motives for the construction of this railway. On this subject the Secretary of War, p. 32, gives his testimony, founded on most unexceptionable authority before him. He says:

"The climate throughout the route is salubrious, the heat due its southern latitude being moderated by the elevation of the table lands. On the Colorado desert it is torrid, but not unhealthy, and much of the country west of the Sierra Nevada and coast range, is calculated for health and agreeableness."

A. B. Gray, Esq., Engineer of the Atlantic and Pacific Railway (of Texas), in his report (for 1855) is equally strong in his testimony with respect to the climate, enters into more particulars, and speaks from much personal experience and observation. Page 23, of the Record for October 4th, has the following statements:

"One of the most favorable features upon the route in the vicinity of the 32d degree of latitude proposed for the Pacific Railway is, its accessibility at all times, admitting of labor being performed in the open air at each season. The nature of the climate throughout Texas to the Rio Grande has already been referred to, and from thence to the San-

ta Cruz Valley, half way to the Colorado, over the elevated plateau of the Sierra Madre, it is equally salubrious and temperate. The rainy season falls in the summer months, and but seldom is snow seen even upon the mountain tops. Towards the Colorado river, it is much drier and more torrid, but by no means unhealthy, nor does it prevent out-door work the whole of every day during the heated term of Summer. In May, June, July, August and September, at times, in the eight or nine hottest hours of the twenty-four, the thermometer ranges as high as 100 to 110 degrees of Fahrenheit; but the excessive dryness and purity of the atmosphere, with the absence of all malaria, makes it free from sickness. Major Heintzelman, who commanded the United States garrison at the junction of the Gila and Colorado, for over four years, informed me that it is one of the most healthy posts he has ever known, and that at all seasons his men worked many hours of the day without being sheltered from the sun. This would be the case for 200 miles east of the Colorado, and 100 west to the coast range of mountains; from thence to the Pacific, summer or winter, the most charming weather prevails. It would be prudent, however, to work during the hottest months of this dry stretch only in the cooler part of the day, from 4 o'clock till 10 A. M., and 5 till 7 P. M."

"Emigrants travel over it chiefly at night, and iron and ties could be laid for fully fourteen hours out of every twenty-four. The graduation and masonry, if necessary, could be done in the winter season without retarding the progress of the road. But what appears to far more than counterbalance the inconvenience in the loss of a part of the daily light, is, that nature has already graded nearly the whole of the distance, not a hill nor hardly a rock to cut through. The four times that we have traversed this so-called desert (January, June and October) we experienced no sickness, nor any trouble except for the want of water. Wells are now dug, and but little privation is felt in crossing it. A locomotive train would pass over it (100 miles) easily in two and a half hours, being level, without a tree or shrub to intercept the view."

We here terminate this number, and in the next shall discuss the question as to the trade and travel of the road, and its benefits to the portions of country through which it will pass.

#### BUSINESS OF A PACIFIC RAILROAD ON THE 32nd PARALLEL.

The value of the Santa Fe trade is stated by Captain Pope to be yearly \$6,000,000.

The number of passengers to and from California is now 50,000 yearly. It will not be extravagant to assume that the road will double this number at once. This, at \$200 per passenger, from Fulton to San Francisco, 2,000 miles, will give \$20,000,000; or at \$150 per passenger, will give \$15,000,000, of which two-thirds may be assumed as profit. It is doubtful whether the present overland emigration can be counted upon as furnishing business for the road.

The light freight which is now carried by the Isthmus route, costing \$394 per ton, and which, when the Isthmus railroad is completed, is to cost \$169 per ton, would take the Pacific railroad route, since, allowing five cents per ton per mile for this road, the cost



per ton from Fulton to San Francisco will be \$105, and thence to New Orleans or Memphis by railroad, \$10 per ton additional.

Fifty millions of dollars in gold are sent annually to the Atlantic States from California. It is doubtful, owing to the nature of the risks, if the per centage of this would accrue to the road. Two per cent., the present cost of transportation, is \$1,000,000, three-fourths of which would, if carried, be the earnings of the Pacific road, \$750,000.

The transportation of the mails may be set down at from \$500,000 to \$1,000,000.

In the year 1852-'53, 22,320,417 pounds of tea were imported into the United States, valued at \$8,174,670, at a freight cost probably of \$15 per ton measurement, (one-half ton weight of tea.) To supply the country west of the Mississippi we have an interior transportation by railroad, canal, or river, of at least 1,000 miles. Freight from China to San Francisco may be assumed not to exceed \$10 per ton. From San Francisco to the Mississippi river, the freight on tea would be \$50 per ton measurement, and the total cost of transportation would be \$60 per ton measurement, against \$30, brought from the eastern ports, (freights from China to Boston \$15 per ton;) this, in the first instance, is six cents per pound, and in the second three cents per pound. The tea imported into the United States is of inferior quality, and in the opinion of those familiar with the trade, would not be less injured by transportation on the railroad route than by that now used; nor would the more delicate teas, should there be a demand for them. The earnings from this source, supposing it carried 22,000,000 pounds would be \$1,000,000.

Imports of silks from China in 1852 were valued at \$1,567,912.

With the same rates of transportation as cattle are carried on the Baltimore and Ohio railroad it would cost \$36 per head to transport cattle, and \$40 per head to transport horses and mules from Fulton to San Francisco. This mode of taking cattle, horses and mules across the continent, would be only partially resorted to, and for those portions where the grazing is not good, say 500 or 600 miles, or about one-fourth of the distance. Cattle driven to New Mexico, or California are sold for about double the cost in Missouri and Texas, costing about \$36 per head and selling for \$72 per head.

To transport a barrel of flour from Fulton to San Francisco would cost from eight to ten dollars per barrel, or from four to five cents per pound, (about double the cost now paid by sea to San Francisco;) and a barrel of pork from twelve to fifteen dollars, or from six to seven and a half cents per pound, and the same for provisions generally.

In the war of 1812 the transportation of all supplies cost from 50 cents to one dollar per ton per mile from Albany to the frontier, say 300 miles, or from \$150 to \$300 per ton—the average being \$225 per ton—and required from fifteen to thirty days for the journey.—We would be nearer therefore to our California coast, in time by from seven to twenty days, and at less than half the cost, were this railroad built, than we were to our northern frontier in 1812-'14.

The transportation of troops to California by the isthmus route has cost \$225 for each commissioned officer and \$150 for each enlisted soldier, &c., with 100 pounds of baggage each, except across the isthmus, where 25 pounds are allowed—the excess being

paid for at fifteen cents per pound. At present the price is \$300 for each officer and \$150 for each enlisted soldier.

The cost to the railroad of transporting troops from Fulton to San Francisco would be about \$60 per man.

The cost to the road for freight will be about \$60 per ton. The cost of transporting ordnance and ordnance stores by Cape Horn has been about \$40 per ton.

The cost of transporting military stores to the posts of New Mexico from Fort Leavenworth varies from \$8 to \$14 per 100 lbs, or from \$160 to \$180 per ton. By the railroad it would cost, from Fulton, from \$24 to \$30 per ton. The cost of transporting baggage and subsistence of troops marching from Fort Leavenworth to New Mexico is about \$15 per man; the time consumed about three months—the expense of the soldier during that time being from \$17 to \$20 per month, or \$60; the cost of transportation by railroad in three days would be \$50, or cost to the road from \$24 to \$30.

The question as to what portion of the trade between the United States and Europe, on the one side, and the empires of Japan, China, and India, on the other, together with the Islands of the Pacific and Indian oceans and the South American Pacific States, of the trade between our Atlantic and Pacific Territories and of our whale fisheries, amounting probably to \$300,000,000 yearly, would be carried by the railroad from the Pacific to the Mississippi, has been so often discussed, that it is not necessary here to enter upon it. The cost of carriage of some articles has been merely touched upon to give an idea of the value of the road for military purposes. The information respecting the former and present cost of transportation of troops and military stores has been obtained from the letter of Major General Jessup, Quartermaster General of the army to the War Department.—*Report of Captain A. A. Humphrey.*

## Opinions of the Press.

[From the Daily Democratic Pennant, Portsmouth, Ohio, March 5th.]

**What would the Southern Pacific Railroad Accomplish?**

To a person who had never been beyond the corporation limits of Portsmouth, or the State limits of Ohio, it might seem that we, who are quietly delving on here in the confluent valleys of the Ohio and the Scioto, could really have very little interest in the great Southern Pacific Railroad, which proposes to connect Texas with California. But we think otherwise, and we beg to state why we think as we do. First and forward, it would build up Texas, and give us those three other States which were conceived in the act of annexation. It would destroy the operations of the Nicaragua Transit Company, and throw the great current of travel through New Orleans, as the starting point, instead of New York. It would give more business to all the Southern roads, and carry untold quantities of freight over our own highways—especially the Ohio river.

These considerations are, however, of minor importance, in comparison with other advantages which would accrue to us. Those who have paid the least attention to the tide of trade and the influx of specie and the precious metals, for the last few years, cannot

have failed to observe that the value of Western property has risen and fell, just as the financial condition of the Eastern cities has been good or bad. In 1852-3 real estate throughout the west bore an enormous price, and business was proportionably accelerated in all parts of the country; and, perhaps, no where was the inland trade more prosperous than in Ohio. The Banks were discounting liberally; real estate was changing hands; taxes were comparatively light; our credit was good, and any man who tried could raise money at a fair per cent.

All this was the result of the vast influx of gold, principally from California. There was, in fact, a large surplus on hand; but the war in Europe soon caused the European capitalists to draw very heavily on us for specie, the ultimate effect of which was to cramp the banks, and through them to cramp the merchants, and these in turn to cramp their agricultural creditors. The draw on the banks was so enormous that hundreds were forced to suspend, and a general panic overcast the entire west; business declined; trade almost ceased; our credit was gone; real estate sunk; and we began to learn that we had been overtrading ourselves in everything, but especially in railroad bonds. The decline in business cramped the railroad companies—operators were unpaid, and we were laboring under an accumulation of evils, which were beginning to drive our most enterprising citizens to the far west. This was the result of the war in Europe.

The war is now about closed; the specie no longer leaves the country in cargoes, and business is again beginning to increase, and a marked activity is apparent everywhere. While the reaction begins thus to recoil on itself, California still continues to pour in her treasure, and unless we shall become engaged in some foreign war, or are distracted by some intestine feud, we may confidently look for a return of the flush times of 1852-3.

There are reasons now which should influence every one to further the opening of the Southern, as well as the Northern Pacific Railroads, as the base lines of a chain of influence which must tend to put our financial system on a solid foundation. We have always been driven into the acceptance of a paper currency, from sheer necessity, and if we can get an abundant supply of specie, we believe our people will repudiate the paper money system entirely. The grand desideratum, therefore, is to open the channels for influx. The opening of the Southern Railroad would tend most powerfully to bring about this desirable end. How would it accomplish this? We answer:

There is no spot on the earth so rich in the valuable metals as Sonora—the Mexican province which stretches along for a considerable length, on the course of the projected southern route of the Pacific Railroad.

The whole region between the Gila and the California Gulf is a bed of the richest minerals. There is a convent covering a thousand acres of land in this region, which is said to be worth more than the combined wealth of London, Paris, Peking and New York.

The metals found here are mostly silver and gold. There are few or no opened mines, and what few attempts that have been made to work these mines, have been conducted in a clandestine manner, in opposition to the selfish laws and contracted policy of the Mexican Government.



In Sonora there exists in great abundance, gold, silver, mercury, copper and iron, in grains, masses, and in dust, either in pure veins, or superficially mixed with other metals. Thirty-four rich mines have been opened by the inhabitants, who, notwithstanding their want of energy and business tact, have amassed independent fortunes in a few years and retired. Nothing is needed to develop these vast resources but Anglo-American enterprise and cupidity. There are no laborers to work the mines—no security to persons and property from marauding banditti, and, lastly, no communication with either the western coast or the settled interior. The Pacific railroad would tap this fertile region, and open a highway for the transportation of men, machinery and provisions, and afford an outlet to the precious metals. The principal mining region lies north of Guaymas, and therefore nearly on the line of the road. The road would carry hither our people, who have never yet failed to protect themselves. It would give us the products of the Sierra Nevada, as well as of the Sierra Madra, and prove a stream of wealth, in the great producing basin of the Mississippi. At the mines of *El Cuomer*, there was found cropping out a block of solid silver, weighing 425 lbs., and yet the mines are not now worked. Nor is this all that may be said of the regions through which the road would pass. The climate is the most salubrious on our continent. The soil is not inferior to that of California, and we firmly believe that the opening of the Pacific road would be the means of soon adding another great State to our Union.

This road would also do everything for California, and as it will fill our country with money, it will enhance the value of Western real estate, and bring again the prosperous days of 1851, '52 and 3. It would enable us to complete our own railroads, by furnishing capital for investment on interest, and would eventually free us from the grasp of European capitalists.

#### TEXAS WESTERN RAILROAD.

From the report of the Vicksburg and Shreveport Railroad Company, made last September, it may be inferred that though slowly, it had, up to that time, been very judiciously and economically conducted, under very serious and unavoidable difficulties, and that the people at both termini of the road, as well as through its whole extent, seemed most earnest and determined in their efforts to place the enterprise beyond any contingency which could prevent its ultimate success within a reasonable time.

Never was there a great highway more necessary for the objects intended to be attained, never was there one more worthy the vigorous efforts directed to its completion, and never an enterprise projected more certain of an adequate return, if constructed with usual regard to economy and durability.

In the construction of this road, reference will no doubt be had to the fact that it will be the last great eastern link in that iron chain which it is hoped will ere long connect the Mississippi with the Pacific ocean. This road, so long covertly or openly opposed by other local and commercial interests, by bad management and sectional opposition, must now go forward. There is no longer the excuse that sufficient surveys on all the proposed routes have not been made; no longer a ground of opposition founded in the asser-

tion that San Diego, on the Pacific was not a safe or convenient harbor for the western terminus of the road; no more an objection based on the supposition that the southern route was impracticable because of its passing hundreds of miles over an arid desert, without wood or water; no longer a reason for delay, because a more central route, if cheapest, would suit the whole Union best.—Worthless must be the subterfuge that it would bankrupt the Treasury, should the General Government undertake or pledge its aid to the completion of the enterprise, since Texas has furnished the means of finishing the road to the Bravo. Silenced must be the hue and cry of its opponents and the jeremiades of Mr. Whitney, that the public domain is exhausted or would be, if placed in the hands of the Wall street brokers for the purpose of its completion.

All these excuses, objections and subterfuges are dissipated, met, or exposed, as weightless, by sufficient surveys along all the once contemplated railroad lines to the Pacific, proving the line of the 32nd parallel the shortest and the cheapest. By a re-survey of San Diego bay, which is now known to be perfectly safe, land-locked, and competent to hold all the navies of the world, and so far as the public lands are concerned, by the action of Texas, the richest State in the Union, which cedes to the Texas Western Railroad Company, land enough to make the road to the Pacific, even should the General Government abandon the project, which in the present condition of our affairs it dare not do.

For the last ten years, no object within the attainment of the Government and people of this Union has been considered more necessary, or has been more popular than the completion of the Pacific Railroad, on a practicable route. A road, the want of which has for years cost, and is now costing us annually more than the expense of making it from the eastern boundary of Texas to the Pacific ocean. Of this fact the people of the Republic have become assured, for many obvious reasons, and since the results of the late surveys have been published, they will brook no longer delay.

The Vicksburg and Shreveport Railroad Company may then go vigorously forward, with the assurance that their road may, at their option, constitute the eastern section of that great continental highway, which will do more to divert most of the travel and much of the commerce of the old world, across this continent, than any enterprise ever yet undertaken. Instead of the vexatious and uncomfortable route by Gibraltar, Suez, and Babelmandel, through heathen or savage regions, and torrid, desert climes—instead of the long and tedious voyage around the Cape of Good Hope, twice crossing the Equator, and rarely touching a civilized coast—instead of the boisterous and uncertain passage around Cape Horn, or, instead of the more lately established route by Panama or Nicaragua, through a pestilential climate, with no safe haven on either coast; instead of a route to the golden portion of our Union, outside of our own limits; instead of all these manifold difficulties, dangers and delays, the travel and commerce of this and the old continents may pass speedily and rapidly through good ports on either coast of our republic, and by railroads and steamboats over the most civilized part of the world, to the Pacific, or Mississippi terminus of the great Pacific railroad at San Diego or Vicksburg, and thence, with all the modern appliances of comfort, speed

and safety, reach either terminus from the other in sixty hours without danger or fatigue. Nor is this by any means a fancy sketch, and that it should not now be fulfilled must always be a cause of reproach, in after times, upon our government and people. The completion of this great road is a mere question of time and money, the last solved by the action of Texas with reference to the projected enterprise now commenced with a fair prospect of speedy completion, if the general government at once performs its most obvious duty to itself and to the people, on both coasts of the North American continent. The completion of this road is, moreover, a question in the solution of which the State of Mississippi, of all the States in the Union, and the city of Vicksburg, among all the cities of the South, is most deeply interested.—*Vicksburg Whig*, February 14, 1856.

#### TEXAS WESTERN RAILROAD.

The *Galveston News* of the 16th inst., gives the annexed information in relation to the progress of the Texas Western Railroad, a continuation of the Vicksburg, Shreveport and Texas Railroad:

Col. Wm. P. Hill inform us that the railroad spirit in his (the eastern) part of the state, is now very active, that it has passed from mere words to works, and that one hundred and forty hands are now employed on the Texas Western Railroad, or what is perhaps better known as the Vicksburg and El Paso Railroad. These hands are now at work grading the section from Marshall to the state boundary line, a distance of twenty miles. This section is expected to be completed ready for iron, during the ensuing summer. Most of the hands have been furnished by stockholders to work out the amount of their subscription, or at least a portion of it. The number of hands is increasing almost daily, and Mr. Brown, agent for the contractors, is supplied with an abundance of all the necessary implements on the spot, together with some labor-saving machines for grading, which, in that light soil, are found to work very successfully. The contractors appear to be prepared with ample means to prosecute the work without interruption or delay. The Vicksburg and Shreveport Company are also prosecuting their road under the most favorable auspices. These two roads are to connect at the State line, and are, therefore, mutually dependent upon each other. The Vicksburg Company have engaged to complete the section of their road between Shreveport and the State line, (also about twenty miles) by the time the Texas Company shall have completed their section from Marshall to the same line, so that the whole road from Shreveport to Marshall may be in operation at once and at the earliest period. When the grading is completed, the iron will be shipped to Shreveport, and by completing that end of the road first, the iron and other materials can be carried on the road itself, to the points where they are wanted. We may now therefore say, that there are four railroads in progress in this state, terminating respectively at Harrisburg, Houston, Galveston and Shreveport, the first of which is in successful operation as far as Richmond.



[From the Cincinnati Daily Enquirer.]

### THE PACIFIC RAILROAD.

Nearly two months since, after a careful investigation of this subject, from information drawn from the most reliable data at that time accessible, our convictions were fixed, and our opinion then advanced, that not only was it of great importance that immediate exertions toward carrying out to completion this magnificent project of national interest, but that the practicability of the work was unquestionable. Our belief, then expressed, that the only route to which attention at this time should be given, is the one coursing through Northern Texas, on the thirty-second parallel of latitude. A recent critical examination of surveys of the various routes from the Mississippi river to the Pacific coast, under the direction of the Secretary of War, agreeable to three several acts of Congress, in 1853 and 1854, confirm and strengthen our former impressions, and eradicate every doubt as to economy, direct and rapid transit, and practicability. The most influential journals in the country, and from nearly every portion of the Union, have, within the last two months, given this subject attention; and deriving their information from the same, the only reliable sources, have, in all instances save one, advocated the adoption of the Southern route, and immediate active construction, for reasons we have before advanced, and which are ably set forth in a recent report of the Committee on Internal Improvements to the Legislature of Tennessee, which we below publish in full, and invite to it especial attention.

[From the Baltimore American, Dec. 6.]

### PACIFIC ROAD THROUGH TEXAS.

The Cincinnati *Railroad Record* contains a very carefully written article on the subject of the railroad to the Pacific, in which the route through Texas is advocated in a very liberal and intelligent spirit. After reviewing the Government reports and Congressional action thereon, the conclusion is arrived at that the Government has substantially abandoned the construction of any road on its own account, and as the work, great as it is, must be constructed by private enterprise, aided by the States, the Texas route is the most eligible. Its central character is defended, as accessible from the Middle and Northern States with out any difficulty, by connections already made or in progress, and the immense advantages of the uniform mildness of the climate, and the great saving of distance, are urged with great force.

The *Record* pursues the subject leading to the conclusion that the land grants of Texas for the construction of the road through her limits form a basis upon which the road can be built. The principal authority for the statistics of these computations is the report of Engineer Gray, to be found among the Congressional documents. His conclusion, it will be remembered, is that the land grants of Texas may be estimated for the building of the road at the enormous sum of \$44,789,760, and the cost of the road through Texas at about \$20,000,000, so that the road could be constructed on that basis, through the whole breadth—seven hundred and eighty-three miles—and a fund be still left of nearly twenty-five millions of dollars. From El Paso to the California, the estimate of Col. Gray asks for \$16,200,000 for the building of the road, and \$8,631,620 for the road from the portion of California to San Pedro or San Diego.—The whole cost of the road, therefore, is set

down as less than the sum which its construction would realize from the land grants of Texas; but the sum depends on the completion of the road throughout.

As a partial road, local for Texas and the East, it would not pay at all, as Gov. Pease, in his late message, explains at length. The *Record* thinks it is within the region of possibility that this basis for such a work can be made available, and really it looks very plausible on paper. The magnitude of the undertaking has, however, discouraged many, who have still confidence in the computations and faith in the grand results which they promise. The *Railroad Record* acknowledging the force of these difficulties, is hopeful that they may be overcome. To accomplish it, demands "a great concentration of means, great prudence and energy in the prosecution of the work and an untiring and indomitable perseverance." These qualities are hard to unite, but such things have been done, and why not in the enterprise which offers such an immense and glittering premium to talent and capital?

**LAKE ERIE WABASH VALLEY & ST. LOUIS RAILROAD.**—The track between this place and Wabash is laid down, and the first locomotive passed over it on Friday last. The length of the road from Toledo to this place is one hundred and fifty miles, and regular trains for freight and passengers run the entire distance. Regular passenger trains commenced running on Monday last, as follows: leaving Peru at 6 o'clock, A. M. and arriving in Toledo at 3. 30, P. M. Passenger train leaving Toledo at 12. 30, P. M. and arriving in Peru at 9. 30, P. M.

The trains connect at Toledo with trains of the Northern and Southern divisions of the Cleveland & Toledo Railroad, for Cleveland, Dunkirk, Buffalo, New York, and Boston and Boston, and passengers will reach either of these places twelve hours earlier than by any other route. George H Burrows Esq. is the Superintendent.—*Sentinel*, (Peru, Indiana.) March 6, 1856.

**PAPER MILLS.**—There are in the United States 750 paper-mills in actual operation, having 2,000 engines, and producing in the year 270,000,000 pounds of paper, which is worth, at ten cents a pound, \$270,000,000.

To produce this quantity of paper 405,000,000 pounds of rags are required,  $1\frac{1}{4}$  pounds of rags being necessary to make one pound of paper. The cost of manufacturing, aside from labor and rags, \$4,050,000.—*Life Illustrated* March 1, '56.

### GEOLOGICAL SURVEY OF KENTUCKY.

#### SYNOPSIS OF REPORT.

From what is known of the comparative geology of the East and West, there is every reason to believe that the iron ores best calculated to be wrought into cheap iron, with coal as a fuel, either in its raw state or coked is to be found chiefly towards the base of the Western coal measures, in the very midst of the market where four-fifths of the iron which will be required after the year 1860 will be consumed and in the heart of a rich agricultural region where subsistence is hardly one-third of what it is in the older States.

What further proof than this is needed to show that it is the duty of every State to ascertain her resources in iron and coal, and publish to the world the localities where these raw materials can be obtained in con-

nection! That State which fails to disclose their early development, not only neglects a national duty, but will lose the advantages to be derived from calling the attention of capitalists to their mineral resources, and will permit the wealth which must inevitably flow from the introduction of so important and lucrative a trade to be directed to other channels. But it is not the iron trade alone which is destined to cluster around these deposits of mineral wealth, manufactures of every description will necessarily be located where it can find the cheapest fuel—one of the great sources of the mechanical power the experience of all nations proves that the real wealth and power derived from such sources by fostering the industry, and instilling into its population habits of application and frugality, and giving encouragement to every species of mechanical invention and scientific discoveries, is the foundation of all national greatness; for those nations who have rapidly accumulated wealth by the discovery of mines of the precious metals, have invariably acquired habits of extravagance, recklessness, and corruption little calculated to lead to permanent national advancement.—Witness Spain and Mexico. Just as the youth who falls heir to large possessions is too apt to fritter away his fortune in dissipation and idleness, and permit his energies to lie dormant for lack of motive to arouse exertion.

Though I have confined the foregoing remarks mainly to coal and iron, they apply equally to the lead and zinc ores disseminated in the limestone underlying and encircling our coal fields, and to the materials required for the use of the potter, that may be derived from several of the geological formations of the State.

The reconnoissance of Greenup and Carter counties, had disclosed, in 740 feet of the lower coal measures, fourteen distinct beds of excellent iron ore, varying from four inches to four or five feet in thickness, associated with coals of superior quality; and there is reason to believe that, in the belt of the same formation stretching thence in a southward course across the entire State, abundance of iron ore and coal will be discovered in prosecuting a detailed geological survey of the mountain counties, since at various localities along its southwestern confines in Pulaski county and elsewhere, important deposits of these minerals present themselves.

The bases of both the eastern and western coal-fields are reservoirs of productive brines wherever they form synclinal folds or troughs or abut on impervious vaults of the adjacent limestones; such as are worked with profit on Goose creek, in Clay county, and at Brashear's salt well, on the north fork of the Kentucky river.

The eastern coal-field, occupying the mountain counties, lies higher above the superficial drainage than the western. It is a prolongation of the Pennsylvania coal measures, which includes the country watered by the Big Sandy, the Kentucky river above its forks; the heads of the Licking, and the Cumberland river above its shoals; embracing some twenty-four of the mountain counties. The coals of this coal-field are, for the most part, of excellent quality; rich in fixed carbon. The main coals, which have been analyzed from Big Sandy, the forks of the Kentucky river, and the shoals of the Cumberland river, yielding about 58 to 63 per cent. of fixed carbon, while they are free from earthy impurities.



In Greenup and Carter counties, from six to eight distinct beds of iron ore exist, sometimes in the same hill, with an average united thickness from six to eight feet; capable, therefore, of supplying under each acre, when mined and smelted, 8,000 tons of iron, worth \$200,000. The same hills contain, at least good beds of working coal, which may be safely estimated to have a united thickness of six feet of solid coal; which will afford in addition, over the same tracts, 10,000 tons per acre, worth at a low estimate, \$20,000, after throwing off an ample allowance for waste and slack.

The upper coal measure of the eastern coal-fields in the counties of Lawrence, Johnson, Floyd, Harlan, and Knox, embraces very thick beds of coal, containing 60 to 63 per cent. of fixed carbon, with a very small ash, lying from fifty to two hundred feet above the superficial drainage. In Lawrence, Johnson, and Floyd, these crop out in the hills bordering on Big Sandy, and therefore easily accessible and convenient for transportation to market.

Fine workable coals, containing 60 to 62 per cent. of fixed carbon, lie under the conglomerate in some of the mountain counties, as, for instance, in Pulaski county, above the shoals of the Cumberland river, conveniently situated for transportation down that river.

These few illustrations will suffice to demonstrate the natural mineral wealth of Kentucky, which seeks only active capital to convert their raw material into articles of commerce, which next to the products of agriculture, are the most essential to civilized man, but which, without that active capital, must lie comparatively dormant.

Over a large part of Europe, the soil derived from the coal measures that contain their mineral wealth, is for the most part an unproductive soil, or at least far below the average of soil in fertility. This is not the case with a great portion of the coal region lying towards the center of the Mississippi valley; because the soil of that region is derived more from the finely comminuted loams and calcareous marls of the quaternary deposits than from the materials of the coal measures themselves over which it has spread, and, to a certain extent, intermingled. Union county, for instance, which is based in its whole extent on the coal formation, is a very rich agricultural region, capable of supporting more than a hundred inhabitants to the square mile, or a population in the whole county of 50,000 to 60,000.

As one of the principal ulterior objects of the geological survey of the State will be to define the limits of the coal-fields, and develop the rich mineral wealth lying adjacent to its confines, and, since the reconnaissance which has been made proved that the lower 1,000 feet of the coal measures and the circumscribing belt of underlying limestone are emphatically the mineral regions of the State, it is evident that the proper plan to be pursued in the prosecution of the detailed geological survey is to carry the work at first around the confines of the coal-fields, then fill the interior from the circumference on the same plan that has been followed in Union county.

The most economical and expeditious plan would be to put an equal force on the western and eastern divisions of the State, and thus carry forward the survey simultaneously around the eastern and western margins of the two coal-fields.—*Henderson Patriot*.

D. D. OWEN, State Geologist.

## STATISTICS OF RAILROADS IN TENNESSEE—CONNECTION OF CINCINNATI AND CHARLESTON.

We have received the Report of Mr. R. G. PAYNE, Commissioner of Roads, to the Governor of Tennessee, it gives a complete view of the railroad enterprise of that State, and is in all respects a most interesting document. We give the Table of Roads, as prepared by Mr. Payne, with some remarks on those Roads which are to connect Cincinnati and Charleston:

### WEST TENNESSEE.

| Railroads in Tennessee entitled to State aid, which are building, or will probably be built. | Whole length of Road, including Branches. | Length of Road in Tennessee. | Whole length of finished Road. | Length of finished Road in Tennessee, including Branches. | Maximum grade of road, in feet per mile. | Whole amount of State aid granted by Tennessee. | Amount of State aid actually received. |
|--|---|------------------------------|--------------------------------|---|--|---|--|
| † Memphis & Charleston—Memphis to Stevenson.....   | 237                                       | 87                           | 216                            | 88  | 47                                       | 870,000   | 700,000                                |
| Bridge aid granted.....  | .....                                     | .....                        | .....                          | .....   | .....                                    | 100,000   | 60,000                                 |
| † Mississippi & Tennessee—Memphis to Grenada.....  | 96  | 9.8                          | 15                             | 9.8   | .....                                    | 98,000  | 98,000                                 |
| † Memphis & Ohio—Memphis to Paris.....   | 130                                       | 130                          | 40                             | 40  | 40                                       | 1,300,000                                       | 400,000                                |
| Bridge aid granted.....  | .....                                     | .....                        | .....                          | .....   | .....                                    | 100,000   | 60,000                                 |
| † Mobile & Ohio—Mobile to Cairo.....   | 527                                       | 118.5                        | 160                            | .....   | .....                                    | 1,185,000                                       | .....                                  |
| † Mississippi Central & Tennessee—Canton, Miss., to Jackson, Tenn.....                       | .....                                     | 48                           | .....                          | .....   | .....                                    | 480,000   | .....                                  |
| Bridge aid granted.....  | .....                                     | .....                        | .....                          | .....   | .....                                    | 100,000   | .....                                  |
| † Northwestern Road, West Tenn—Nashville to Hickman.....                                     | 171                                       | 77                           | .....                          | 68  | .....                                    | 770,000   | .....                                  |
| Bridge aid granted.....  | .....                                     | .....                        | .....                          | .....   | .....                                    | 100,000   | .....                                  |
|  | 470.3                                     | 431                          | 137.8                          |   |  | 5,103,000                                       | 1,318,000                              |

### MIDDLE TENNESSEE.

|   |       |       |       |       |       |           |           |
|---|-------|-------|-------|-------|-------|-----------|-----------|
| * Nashville & Chattanooga—Nashville to Chattanooga, (in operation)..... | 151   | 151   | 151   | 151   | 106   | 1,500,000 | 1,500,000 |
| † Tennessee & Alabama—Nashville to Hamburg.....                         | 135   | 135   | 27    | 27    | 49    | 1,350,000 | 300,000   |
| † McMinnville & Manchester—Manchester to Tullahoma. (All graded.).....  | 34.5  | 34.5  | ..... | ..... | ..... | 345,000   | 300,000   |
| § Central Southern—Columbia to Decatur.....                             | ..... | 48.5  | ..... | ..... | ..... | 485,000   | .....     |
| † Louisville & Nashville—Nashville to Louisville.....                   | 184   | 45.5  | ..... | ..... | ..... | 455,000   | .....     |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 100,000   | .....     |
| § Edgefield & Kentucky—Nashville to Henderson.....                      | 144   | 48    | ..... | ..... | ..... | 480,000   | .....     |
| § Western & Tennessee—McMinnville to Danville.....                      | ..... | 85    | ..... | ..... | ..... | 850,000   | .....     |
| † Winchester & Alabama—Daclard's to Guntersville.....                   | 67    | 23    | ..... | ..... | ..... | 230,000   | .....     |
| † Nashville & Northwestern—in Middle Tennessee.....                     | 171   | 81    | ..... | ..... | ..... | 810,000   | .....     |
|   | 651.5 | 178   | 178   |       |       | 6,605,000 | 2,100,000 |

### EAST TENNESSEE.

|   |       |       |       |       |       |           |           |
|---|-------|-------|-------|-------|-------|-----------|-----------|
| * E. Tenn. & Ga.—Knoxville to Dalton, (including a fraction in Georgia.)..... | 110   | 110   | 110   | 110   | 37    | 770,000   | 770,000   |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 100,000   | 100,000   |
| † E. Tennessee & Virginia—Knoxville to Bristol.....                           | 130   | 130   | 26    | 26    | 68    | 1,300,000 | 469,000   |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 300,000   | 300,000   |
| † Knoxville & Charleston—Knoxville to State Line.....                         | 55    | 55    | ..... | ..... | ..... | 550,000   | .....     |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 300,000   | .....     |
| † Knoxville & Kentucky—Knoxville to Danville.....                             | ..... | 60    | ..... | ..... | ..... | 600,000   | .....     |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 100,000   | .....     |
| § Western & Charleston—Athens to Blue Ridge Road.....                         | ..... | 30    | ..... | ..... | ..... | 300,000   | .....     |
| § Cleveland & Chattanooga—Cleveland to Chattanooga.....                       | ..... | 30    | ..... | ..... | ..... | 300,000   | .....     |
| † Cincinnati, Cumberland Gap and Charleston—Paint Rock & Cumberland Gap.....  | ..... | 94    | ..... | ..... | ..... | 940,000   | .....     |
| Bridge aid granted.....   | ..... | ..... | ..... | ..... | ..... | 200,000   | .....     |
|   | 509   | 136   | 136   |       |       | 5,760,000 | 1,639,000 |

### RECAPITULATION.

|                       | Miles of Road in Tenn. | Miles Finished. | State Aid Granted. | State Aid Received. |
|-----------------------|------------------------|-----------------|--------------------|---------------------|
| West Tennessee.....   | 470.3                  | 137.8           | 5,103,000          | 1,318,000           |
| Middle Tennessee..... | 651.5                  | 178             | 6,605,000          | 2,100,000           |
| East Tennessee.....   | 509                    | 136             | 5,760,000          | 1,639,000           |
|                       | 1,630.8                | 451.8           | 17,468,000         | 5,057,000           |

Part of the Nashville and Chattanooga Road, in Alabama, is placed as being in Tennessee.

In addition to the Roads marked as finished and in operation, many of the companies, particularly those marked with a (†) have large portions of their lines graded, and will lay the track upon them during the present year. But I have no means of ascertaining the exact amount of graded road on each, as I have made a personal examination only of those lines making application for State Bonds.

Note.—In the estimate of finished Roads, the Nashville & Chattanooga Road and Branch, being 159 miles. The State aid per mile granted to and received by this Road, is \$9,433.

Note.—Roads marked thus (†) are finished. Roads marked thus (‡) are in an active state of construction, and possessing rapidly to completion. Roads marked thus (§) have portions of their lines under contract, and some work going on. Roads marked thus (¶) have organized with a determination to go on to completion but have not let their work to contract.



Speaking of those roads, which are to connect Cincinnati with Charleston, Mr. Payne thus remarks :

Passing, however, to the Eastern portion of our system of improvements, I remark that the Knoxville and Kentucky, and the Knoxville and Charleston roads, when completed, will establish an important communication between Cincinnati and Charleston, and thus open up a highway between the Ohio valley and the South-Atlantic seaboard. Cincinnati and Charleston, (the Queen Cities of their respective States,) upon the completion of these projects, will have been for the first time locked in a lasting embrace!—"a consummation most devoutly to be wished." The line of roads from Knoxville, designed to connect that place with Charleston, is made up of four companies, to wit: The Knoxville and Charleston Railroad Company in Tennessee; the Tennessee River Railroad Company, in North Carolina; Blue Ridge Railroad Company, in Georgia; and Blue Ridge Railroad Company in South Carolina. These four companies together have a capital of nearly \$5,000,000. The enterprise contemplates the construction of two hundred miles of road, from Knoxville to Anderson Court House, in South Carolina, which, if constructed, will place Knoxville one hundred and twenty miles nearer to Charleston than by the present railway route. About fifty miles of the road in South Carolina was graded in September last, and about seven hundred hands were then engaged upon that part of the line.

A reference to the map will show the importance of the connection intended to be established by the proposed Western and Charleston Railroad.

The Cincinnati, Cumberland Gap, and Charleston Road is the Tennessee link in a line of roads from Cincinnati to Charleston, which is designed to enter the State on the North at Cumberland Gap, and passing out of it into North Carolina, by way of French Broad River, at Paint Rock. To complete this line of road, there is yet to be finished (besides the Tennessee part) one hundred and twenty-eight miles from Lexington, Kentucky, to Cumberland Gap, and, on the South about one hundred miles from Paint Rock to Spartanburgh, South Carolina. The Legislature of North Carolina has appropriated, as I believe, five millions of dollars to extend her Central Road from Salisbury (the point at which it is completed) to Paint Rock. The North Carolina Central is intended to form a part of the Main trunk of said line of roads. The *termini* of the North Carolina Central are Paint Rock, on the French Broad, and Beaufort, on the Atlantic, with a lateral to Spartanburgh. This line of roads, if completed, will form nearly an air line through upper East Tennessee, from Cincinnati to Charleston. The only material divergence (of about thirty miles) is in approaching the Cumberland Mountain.

HENDERSON & NASHVILLE R. R.—At a meeting of the Directors of this road, held at Henderson, Feb. 5, the resignation of President Seabee was accepted and Ex-Governor Powell was elected in his stead. Alexander B. Barrett, Esq., was elected to the vacancy in the Board.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 80 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, MARCH 17, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, ..... MONDAY, MARCH 17.

### THE VALUE OF THE PACIFIC R. R. TO THE U. S. GOVERNMENT, AS A LANDHOLDER.

There are various reasons why a Pacific Railroad should be made by the United States. One is for the sake of *justice* to the Pacific States which are, and are to be. One is for *defence*—for without such a road no defence of the Pacific coast, against a great naval power, can possibly be made. A third, and sufficient reason, would be the great additional facilities given to the internal commerce of the nation.

All or either of these reasons should be sufficient to engage the Government in some efficient means for the construction of a Pacific Railroad. But, at the present time, we propose to consider another, and one of the most efficient motives for human action. We mean the *selfishness* of a landed proprietor. The United States is an immense landed proprietor, and notwithstanding the profuse and indiscriminate waste, as we consider it, of the public lands, of late years, there is yet a vast unexpended domain. From the sales of this domain, the Government has derived, at different times, a large revenue—a revenue which has occasionally been of great service. Now, as a landed proprietor, the Government has a direct and great interest in increasing that revenue; but as the alluvial lands of the Mississippi and its tributaries are being rapidly exhausted, it is plain this revenue will soon be exhausted, unless the great domain on the slopes of the western mountains can be made available. There is only one way to do this—to make *communications*. It may be said in reply that a large amount of those lands are unavailable, in any event, being barren. This is not so, except of small quantities. They are so now, because they are annually run on by buffaloes and Indians, without cultivation and without irrigation. But, by the introduction of domestic grapes, and a moderate irrigation, more than half the lands pronounced barren would become highly valuable. Supposing half—a very small proportion—to be so, there is yet full half the residue which are more valuable for mines, water power and timber, than even the best of cultivable land. We have no doubt whatever that the gold now obtained from California annually, is not *half* the value of precious metals (including silver) which will, in a short

time, be got there. We may safely assume, therefore, that full *three-fourths* of all the public domain west of the Mississippi is available, *provided* it can be reached by easy commercial communication. To this, it is necessary there should be one or more (better three) great chains or lines of railroad from the Mississippi to the Pacific. When these are made, the communities which arise on these lines, (as in the older States, on the great rivers,) will gradually make the lateral lines, till the whole region west of the Mississippi is supplied. Now, let us suppose that the United States agree to give *one-tenth* (10 per cent.) of its domain west of the Mississippi States, as now formed, for the purpose of making *two* lines of railroad from the waters of the Mississippi to the waters of the Pacific. In this let us discard from the account entirely *one-fourth* the whole amount, as not worth more than the cost of survey, being composed of mountain ridges, or arid plains. Let us then see how the account will stand. By the public surveys there are—

|   |                  |
|---|------------------|
| West of the Rocky Mountains.....  | 870,209 sq. m.   |
| Between the Rocky Mountains and the States of Missouri, Iowa and Texas... | 711,640 do       |
| Lands of U. S. west of the Mississippi.....                               | 1,581,849 sq. m. |
| Deduct property under Mexican titles and the State of Texas.....          | 337,504 do       |

|   |                  |
|---|------------------|
| Unsold domain.....                                | 1,244,345 sq. m. |
| Deduct <i>one-fourth</i> , as above, not valuable | 311,086 do       |

|   |                |
|---|----------------|
| Aggregate.....  | 933,259 sq. m. |
| Apply <i>one-tenth</i> to the construction of the Pacific Railroad..... | 93,325 do      |

|   |                |
|---|----------------|
| Lands of the United States available with the Pacific Railroad..... | 839,934 sq. m. |
|---|----------------|

Now, let us see what has been done, and what is the *result*.

The grant to the railroads will be equal to 93,325 square miles, which, supposing two lines at 2,000 miles each, is twenty-three and four hundred and thirty-one thousandths, or about *twenty-three* and a *third* square miles per mile of railroad—that is twenty-three sections, or 14,720 *acres* per mile. It is doubtful whether this is enough to secure the making of the road; but we will assume that it is.—Now, no one can believe that the domain of the United States, on either side of the Rocky Mountains, would sell for money at 50 cents an acre; but with two great lines of railroad piercing it, and other lateral lines projected, and communities fast settling to make them, we may safely estimate that, after discarding *one-fourth*, as we have done, the residue, so *circumstanced*, will be worth about the present value of wild lands now saleable, viz: \$1 per acre. What then is the result? The United States have left 839,934 square miles of available land, which is not worth 50 cents an

acre, but which will be worth \$1. The account current, then, stands thus:

|   |               |
|---|---------------|
| Lands <i>without</i> the railroad, 640 acres, of \$320 per square mile..... | \$131,398,440 |
| Same land <i>with</i> the road.....   | 268,778,880   |
| Gain.....   | \$134,388,440 |
| Value now of lands given to the road.....                                   | 30,000,000    |
| Positive gain.....  | \$104,388,440 |

*One hundred millions!*

There can be no question that the gain would be at least that, and probably more; because it may be doubtful whether the great body of these lands are worth anything, unless made available. If we are to take, without any allowance, the statements of explorers, they are not. But, as we remarked in the first place, we regard these accounts as only true of the *present condition* of things. Nature has not denuded any portion of the earth entirely, and it only needs men and tools to bring the land into high cultivation. We said it was doubtful whether the railroad *can* be made, with the quantity of land above stated, and we believe it cannot, except one way, viz: that the undertakers will be allowed to select the lands wherever they can find them *good*. In this way the road can be made, and in no other way, by private enterprise.

### THE PACIFIC RAILROAD QUESTION, AND THE ISSUE.

That a Pacific Railroad is the great want of the day, few we believe will deny. It is universally conceded that such a highway is needed for the commerce of our own country, for its defence in war, and prosperity in peace, for the social and national necessities of our people, for the intercourse of our citizens, and for the commercial convenience of the civilized world. Such being the fact it only remains to determine where and by what means this railroad shall be built.

FIRST. Where shall a railroad to the Pacific be built? The elements that enter into the question of locality of a railroad are two, topographical and financial—the feasibility of the country, and the cost of the road. We shall consider these separately.

FEASIBILITY OF COUNTRY. The feasibility of a country for railroad purposes depends upon the general character of its surface, its mountain passes, and its rivers. Each of these may again be considered in detail, and have an important bearing on the final decision of the question. An examination of a map of the American Continent will show that its great topographical feature is the range of mountains extending like a spine from Behrings Straits to Patagonia, and presenting



the principle difficulty to be overcome in passing from ocean to ocean; that elevation once overcome, the descent either way to the shores of the ocean, is easily accomplished. The following results from the government surveys afford some interesting considerations:

#### SUMMIT OF HIGHEST PASS.

|  | Feet.  |
|--|--------|
| Route near 47th and 49th parallel from St. Paul to Vancouver.....  | 6,044  |
| Route near 41st and 42d parallel from Council Bluffs to Benicia.....   | 8,373  |
| Route near 38th and 39th parallel, from Westport to San Francisco by the Coo-che-to-pa and Tay-ee-chay-pah passes..... | 10,032 |
| The same by the Coo-che-to-pa and Madelin passes.....  | 10,032 |
| Route near the 35th parallel from Ft Smith to San Pedro.....   | 7,472  |
| Route near the 32d parallel from Fulton to San Pedro.....  | 5,717  |

These figures develop plainly the fact that the lowest passes are those near the 47th and 49th, and the 32d parallel, rising gradually towards the 39th parallel, till they acquire an elevation nearly double those first mentioned. The lowest passes then are those to the extreme north and extreme south of our territory; the mountains of the center are of much greater elevation than those on either side. They also extend over the greatest breadth of country, spreading out in lateral chains which reach to the waters of the Missouri, on the one side, and those of the Pacific on the other, thus making a broad extent of broken country. But this again will be more clearly shown by reference to the government reports.

#### SUMS OF ASCENTS AND DESCENTS.

|   | Feet.  |
|---|--------|
| Route near 47th and 49th parallel.....        | 18,100 |
| " " 41st and 42d ".....                       | 29,120 |
| " " 38th and 39th " Tah-ee-chay-pah pass..... | 49,986 |
| " " do Madelin pass.....                      | 56,514 |
| " " 35th parallel.....                        | 48,812 |
| " " 32d ".....                                | 32,784 |

Here again it will be observed that the sums of ascents and descents on the central routes far exceed those on the extremes.

The third topographical consideration is the river crossings and the amount of bridging. Here we are unfortunately without the condensed data afforded for the other features of the routes. But an examination of the map will show that on the northern route, the streams to be crossed are the small branches of the upper Missouri and the Columbia. On the central routes, the Missouri and its larger branches. On the southern route, the head waters of the small rivers of Texas, the Rio Grande and the Colorado of the west. On neither routes do these present a very formidable obstacle.

**COST OF THE ROAD.** We come now to consider the question of distance and cost. Here again we have valuable data in the complete reports furnished by the government.

|   | Distance | Cost.                            |
|---|----------|----------------------------------|
| Route near 47th and 49th parallel.....        | 1,894    | \$120,781,000                    |
| " " 41st and 42d ".....                       | 2,032    | 116,095,000                      |
| " " 38th and 39th " Tah-ee-chay-pah pass..... | 2,080    | So great as to be impracticable. |
| " " do Madelin pass.....                      | 2,200    | do                               |
| " " 35th parallel.....                        | 1,892    | 109,210,265                      |
| " " 32d ".....                                | 1,618    | 68,979,000                       |

In the item of cost and distance, the central routes again largely exceed those on either side; but the difference between these again is largely in favor of the route of the 32d parallel. It is 250 miles shorter, and will cost but about one-half as much as the most favorable of the other routes.

It is plain then, that the question *where* should the Pacific Railroad be built, is settled, by considerations of topography and economy, on the line of the 32d parallel. *Its passes are the lowest, its distance is the shortest, and its cost is the least.* These three considerations, therefore,—each of them of the highest importance—stamp the route of the 32d parallel as pre-eminently the route for the Pacific Railroad.

**SECOND.** The means by which the Pacific Railroad shall be built. Railroads are generally begun by persons living on their line, or interested in property through which they pass. These persons generally take, or should take, sufficient stock to grade the road-bed, and then mortgage their work to purchase iron, build depots, and equip their road. They are induced to furnish this amount of money, at the outset, in the expectation of increased value of property and social advantages to result from the road. Now in the case of the Pacific Railroad, there are no inhabitants at present on the line, to be benefitted, hence the stock will not be taken by persons on the line. The next resort is those who own the property. Here, again, we are at fault. Private enterprise has not yet been led to purchase. Hence the gain to be obtained, and the responsibility to construct must fall to the lot of the great owner of our vacant domain—the general government. If the land is to be raised in value by the road, when built, the government is to reap the advantage of the rise. If it is to be held unsold and unsettled for want of the railroad, the government, as the owner, must pay the taxes, or rather what is the same thing, must get along without them, because no tax can be levied. The government has the greatest and most direct interest in the building of this railroad. The government, therefore, by every rule of justice, should furnish means to construct it.—But how should this means be furnished. Direct government investments, have, with one or two exceptions, been found to be unfortunate affairs, and it could hardly be expected that an investment of the magnitude of the Pacific Railroad would be more fortunate in avoiding the errors of mismanagement and extravagance which have attended government investments in smaller projects. But if government cannot prudently invest its money in this enterprise, it can do that which is better—give a basis for private credit out of that which is now worthless for either sale or revenue; and by so doing make the balance of its unoccupied domain profitable for sale, and profitable as a permanent tax-paying

investment. We have good authority for saying "there is that giveth and yet increaseth, and there is that holdeth back more than is meet, but it tendeth to destruction."

That government has the right to donate a portion of its lands to make the rest valuable, admits of no question; it is not, moreover, without a precedent. The Illinois Central and the Mobile & Ohio, and the Hannibal & St. Joseph Railroads, and the Saut Ste. Marie Canal, all afford a precedent for action on the part of Congress. The people expect it, desire it, and will not be satisfied unless some adequate provision is made which will secure the construction of a railroad.

But what would be the probable amount of land necessary to be donated to secure the final completion of the Pacific Railroad. It is estimated by practical men, who know the difficulties of constructing a railroad so far from civilization, and the value of lands located as the government lands are located, that fifty sections of land to the mile of railroad would make the capitalist secure in investing his money in this project. Let us now compare the grants of land that would secure a road on those routes that are deemed practicable:

|   | Miles. | Sections. |
|---|--------|-----------|
| Route near 47th and 49th parallel.....                          | 1864   | 93,200    |
| " " 41st and 42d ".....   | 2032   | 101,609   |
| " " 35th ".....   | 1892   | 94,600    |
| " " 32d par'l, from El Paso to San Diego, by Gray's survey..... | 838    | 41,900    |

The route on the 32d parallel has already been provided for by the State of Texas to its western border. The general government may therefore, by a donation of 41,900 sections of its unoccupied lands, secure the final completion of this great highway on this parallel. On any other route it must give more than double that amount.

#### A COMMENTARY ON THE NORTHERN PACIFIC RAILROAD.

We publish the following interesting commentary on the practicability of a Northern Pacific Railroad, from the "State of Maine," published at Portland, Me., under date of Feb. 28, 1856:

**DETENTION ON THE RAILROADS.**—The snow storm of Sunday has had a most serious effect upon the trains on the narrow gauge roads leading into Portland. Up to 10 o'clock this morning, we have had no train from Boston or Augusta since Saturday afternoon. The train which left here yesterday morning is now stuck at Berwick. The morning train for this city on the B. & M. road is still at Exeter, and that on the Eastern is nobody knows where. At 4 o'clock, yesterday P. M., it had reached Beverly, 16 miles from Boston.

The snow continues to blow in upon the track, and unless some extra propelling power is used, we stand no chance of regular communication with Boston before July.

The trains from Bangor and Island Pond arrived in good season, without delay.

**QUERY.**—If a train was snowed in "nobody knows where," between Lake Superior and Puget's Sound, how would the friends of the travelers feel?



**SOUTHERN PACIFIC RAILROAD—SOIL OF THE COUNTRY, AND GENERAL ADVANTAGES OF THE ROUTE. BY CAPT. A. A. HUMPHREYS.**

The table-lands, extending from the cultivable soil of Texas westward, have generally a growth of grama grass. The principal exceptions are a large portion of the Llano Estacado, and for 70 miles of the descent to the Gila; nor is grass found in that portion of the valley of the Gila traversed by the route, although the soil is fertile; nor is it found on the Colorado desert, or on the crossing of the southwest corner of the Great Basin.

The soil of the river valleys is fertile, but for cultivation needs irrigation. After leaving, for the first time, the body of the productive soil of Texas, we have the valleys of the Pecos, Rio Grande, Gila, and Colorado, portions of whose areas possess a fertile soil; the sum of these exceeds 2,300 square miles. That portion of California west and south of the coast range, has a soil and climate which will admit of a dense population.

The mineral wealth of the countries near the 32d parallel has been indicated by others, and needs no other mention.

The proposed road passes near the northern borders of the Mexican States, or departments of Chihuahua and Sonora. They extend northward from latitude 27° or 28° to our boundary. The surface is generally table lands, affording good grazing; the climate is agreeable. The soil of the river valleys is fertile, capable of producing, when irrigated, wheat, cotton, &c. Their wealth is principally in cattle, farms, and mines of gold and silver. The area is 280,000 square miles. The population exceeds 300,000.

Although this route passes near the frontier of Mexico, yet it is not liable to objection from this circumstance, since we control the frontier; and the construction of the road would probably break the power of the Indian tribes.

It passes through or near territories having already large populations; that of New Mexico, according to the report of Captain Pope, being 50,000; and that of Chihuahua and Sonora, as above stated, being more than 300,000.

The chief advantage of this route is, that for the space of 1,100 or 1,200 miles, the usual item of great expense in railroads is in a great measure avoided, there being no necessity to prepare an expensive road-bed, except in a few instances, in the passage of the mountain chains. Draining and ballasting are also dispensed with at the same time. Over the remaining portions of the route—418 miles if to San Pedro, and 839 miles if to San Francisco—the ground is generally favorable to the construction of the road-bed.

The mountain passes of the route are generally favorable; those west of the Rio Grande requiring no difficult engineering for location through them, and but little rock excavation or expensive embankment and side cutting. The Guadalupe and Hueco Passes are more difficult. The short tunnel on the San Fernando Pass, and those that may be needed in the New Pass, will not be found difficult in their execution.

The climate throughout the route is salubrious, the heat due its southern latitude being moderated by the elevation of the table lands. On the Colorado desert it is torrid, but not unhealthy, and west of the Sierra Nevada and coast range is celebrated for health and agreeableness.

From a consideration of these favorable circumstances, and after a close examination of all the sources of increased cost of construction, from the peculiarities of situation, climate, and geological and topographical formation, I am of opinion that the road may be built as a first class road, in regard to superstructure, rail, &c., and equipped sufficiently for the business that may be reasonably expected, for a sum that will not probably exceed \$45,000 per mile.

**THE MEXICAN BOUNDARY.**

BY COL. A. B. GRAY.

We give to our readers to-day some interesting passages from Col. Gray's survey of the Mexican Boundary:

The district of country embraced between the parallel 32° 22', advocated by Messrs. Bartlett and Conde for the southern line of New Mexico, and that of the true boundary of the treaty, which is about eight miles above the town of El Paso, some thirty-four miles by about one hundred and seventy-five and a half, with an area of nearly six thousand square miles, is, in my opinion, of very great importance to the United States; and, although I have not believed the value of the Mesilla valley a matter to be considered in connection with sustaining our just rights to it, still as Commissioner Bartlett, after his unfortunate mistake, in endeavoring to surrender it to Mexico, has endeavored to under-rate it and place a low estimate upon its importance, it might be as well for me to say to that, my opinion in this respect is likewise adverse to his.

The district disputed by Mexico is far from being worthless, as Mr. Commissioner Bartlett would now have us believe, simply because it contains uncultivated plains and barren wastes. These plains and wastes possess, in my opinion, comparatively favorable topographical features, when taken in connection with their geographical position, forming a break, as it were, in the great Rocky Mountain chain.

They offer, for a passage of a railway over the Sierra Madre, great advantages, from their gradual slopes and low altitudes to overcome, being free from heavy snows, and uninterrupted communications the whole year round. The absence of heavy grades, with comparatively little excavations and embankments, is another great consideration in the construction of the iron link which is so desirable to connect the Atlantic States with our Pacific possessions.

I believe the disputed district will be found to embrace the most accommodating gateway over the Rocky Mountains, and the most feasible route from the Rio Grande to California.

The highest elevation to overcome near the parallel of 32° north latitude, is not over five thousand two hundred feet, with gradients not exceeding sixty feet to the mile, and generally averaging about twenty.

The summit level here referred to is reached by a westward course from the Mesilla valley, over a plain at a point about one hundred miles from the Rio Grande.

The region along the parallel of 32° in the disputed district presents the appearance of an extensive plateau or table land, diversified by gentle undulations, occasional ridges, and isolated mountains, which may be avoided or overcome by any manner of road.

These topographical features are characteristic of the whole belt of country stretching

across to the Colorado, or to the head of the Gulf of California, and I believe are not observable in any other part of the great chain of mountains forming the backbone of the continent north of Tehuantepec.

Besides commanding, in my opinion, the easiest and most practicable pass over the Sierra Madre, the disputed district comprises within its limits valleys and plains which, in the event of a railway or wagon road being built on this route, must become important for depots and stations.

The valley of Mesilla, extending from about twelve miles above the true boundary of the treaty to the parallel of 32° 22' north latitude, lies wholly within the disputed district, and is, for its extent, one of the most beautiful and fertile along the whole course of the Rio Grande.

The town of Mesilla, only a few years old, contains several thousand people, and is a prosperous little place.

Portions of the valley are highly cultivated, and produce the grains and fruits of our most thriving States.

In connection with the land on the east side of the river, the valley of the Mesilla is capable of sustaining a considerable population. It is situated centrally with regard to a large district of country of lesser agricultural capacity.

The section of the Rio Grande in the vicinity of El Paso and this valley is proverbial for the production of fine vegetables and fruits. Indeed it is a complete garden, with its flourishing vineyards, equaling in excellence those of the most celebrated grape growing countries.

Proceeding westward from the Mesilla valley, an elevated plain is traversed, which conducts to the summit of the Sierra Madre, (mother of mountains,) at a point about 100 miles distant, with an ascent so gradual as to be scarcely perceptible to the eye.

From the terminus of the disputed territory, which is about 175 miles west of the Rio Grande, to follow a route upon our own soil, we must proceed northward to the Gila river. It is approached through a valley where there are indications of old settlements, and other marks, showing that the region was once thickly populated. Some have attributed the origin of these indications to the Aztecs.

From this point, (the intersection of the western boundary of New Mexico with the Gila,) to continue within the prescribed limits of the treaty, the "space of one marine league from either margin of the river," two barriers have to be encountered, which, though great, are not, in my opinion, impassable in the construction of a railway, as some have supposed them to be.

The canon of the Pinal Llano Mountains, just before reaching the junction with the San Pedro, presents a bold obstruction, it is true; the walls of solid rock, rising in some places perpendicularly to the height of 1,800 feet on either side of the stream. It is possible, however, to build a road along the face and from the fragments of these cliffs, and at far less expense than a tunnel would cost of the same length—ten or twelve miles—nature having already performed a portion of the task by a gorge-like cutting through which the stream flows.

The other impediment is also on the Gila, about eleven miles below the mouth of the San Pedro river, but it is of much less consideration than that just mentioned. The remainder of this river, for some three hundred



miles, interposes nothing to prevent the construction of a railway to the Colorado, westward of which lies the great Jornada of California.

This desert is about ninety miles in width; is level, with occasionally sandy portions, which would not, however, materially interrupt the progress of a railway. It is chiefly devoid of timber, and generally destitute of water; the latter might be got at any season, by digging or sinking artesian wells.

The Sierra Nevada has then to be traversed before reaching the Pacific. Practicable passes, such as Warner's Weaver's and Walker's, I believe will be found through these mountains, leading into the ports of San Diego and San Francisco.

From my own personal observations, and information obtained from published reports, and from persons who have traveled across the continent, at various degrees of latitude, I believe the shortest and most feasible route for a railway through our present territory, and within the terms allowed by the treaty with Mexico, would be from the region of El Paso, over the disputed district, to the Gila, and down the valley of that stream to the Colorado; thence from a point near the junction of these two rivers to San Diego, an entire distance of eight or nine hundred miles only from the Rio Grande.

There would be one ridge of mountains, (the coast range of California,) one desert of ninety miles, and two canons, above referred to, to overcome.

The route I here speak of has reference to being entirely within the limits of the treaty of Guadalupe Hidalgo—a slight deflection however, to the southward of the Gila, after passing beyond the disputed district from the "Aztec" valley, through an indentation of the "Sierra de la Florida," passing over some forty miles of Mexican territory, would avoid the Pinal Llano canon entirely.

A much more practicable and less costly route still would be westward from the Mesilla valley, in the vicinity of the trail followed by us in 1851, crossing Cook's road near the summit of the Sierra Madre, and striking it again at the San Pedro branch; thence either following the San Pedro down, or pursuing a northwesterly course to a point some 15 miles above the Pimos villages, and thence down the valley of the Gila, crossing near the junction with the Colorado, to San Diego and San Francisco.

The valley of the San Pedro may offer advantages above those of the great plains lying west from Tucson. This, however, should receive a thorough examination, which it was impossible for the Boundary Commission to make under the circumstances surrounding them while in that neighborhood.

For a distance of three hundred and fifty miles, commencing at the nearest point of the Gila, to where we supposed the western boundary of New Mexico would strike it when run conformably to the treaty, no obstacle whatever interposed to cause a suspension of accurate chain measurements, which I carried on with my party, while running and marking the boundary, except in the canon of the Pinal Llano Mountains, already described.

Herc, from the shortness and uncertainty of the necessities of life which we had on hand, growing out of causes not created by myself, and over which I had no control, we were obliged to hurry on, and allow no time for a thorough examination of the Gila, for about a distance of seven miles. We there-

fore had to abandon the river, and proceed over the mountains by an old Indian trail, computing our distance from data obtained by other modes than that of chaining.

Timber of sufficient durability for temporary purposes will be found on the Rio Grande and the Gila, at accessible points along either of the lines I have described. I mention for temporary purposes, because that chiefly to be depended upon would be the cotton-wood, and although in that climate the ties for a railway made of this timber might last for several years, still it would be found more advantageous to replace them with a more substantial wood, which is found along the eastern portion of the parallel of 32°, through Sonora, Chihuahua, and the State of Texas, and which the road itself, when once constructed, with but little expense, could be made the means of transporting.

It is possible that mesquit may be found large enough for all the purposes required.

[CONCLUDED NEXT WEEK.]

**MEMPHIS & LITTLE ROCK R. R. Co.**—At a meeting of the Stockholders of the Memphis and Little Rock Railroad Company, held at Hopefield, Ark., on the 15th inst., James M. Williamson, Daniel B. Turner, James Elder, H. L. Guion, of Memphis, and Geo. C. Watkins, of Little Rock, were elected Directors in said Company for the present year.

#### **PAINESVILLE & HUDSON RAILROAD.**

This road, which is now constructing, is 42.6 miles in length, making a gain of 11 miles between the same points over the route by Cleveland. The harbor of Grand River the outlet of this road, is pronounced by the U. S. Engineers to be the best harbor on Lake Erie, and undoubtedly it is a better one than that at Cleveland. This road is also the Lake terminus of the Cincinnati and Zanesville Railroad, which will need a new outlet for its coal business, if no more.

This work has been slowly constructing under charge of Judge Van R. Humphreys, as President; Mr. Smith, Engineer, and Colender & Co., as contractors. The local subscription is quite a large one—\$300,000, and it is supposed will be increased \$150,000 more. The contract with Messrs. Colender & Co. is also a liberal one, and if the citizens on the road will lend an energetic hand, the Painesville Railroad will be very easily made. It passes through Chardon, county-seat of Geauga, and Chagrin Falls, very flourishing towns. We have no doubt that the local business of this road would make it, if the road was once finished in good running order.

**M. AND I. RAILROAD.**—On yesterday the Madison and Indianapolis Railroad Company complied with the terms of the act of 1855 for the purchase of the State's interest in the road, by the delivery of seventy-five thousand dollars of the stocks of the State to the Governor.—This step will secure something to the stockholders, and we hope enable the road to resume its career of prosperity.—*Ind. Journal.*

#### **MILWAUKEE AND HORICON R. R.**

The Milwaukee *Sentinel* says: "On Wednesday last, Feb. 20, the opening of the Milwaukee and Horicon Railroad to Wampun, (about 65 miles from this city) was celebrated at the latter point with appropriate festivities. An excursion train left this city at half-past 8 o'clock A. M., passing over the La Crosse to Horicon, and thence, over the M. & H. R. R., to Wampun. The train consisted of seven passenger cars, all completely filled, yet not overcrowded. The day was delightful; the progress of the train rapid, and the spirits of the company tip-top.—At half-past one o'clock the party arrived at Wampun, and were received with all the honors by a very large crowd of people gathered from all parts of the adjacent country."

Horicon is a growing village. On the 4th of June last, it contained 573 inhabitants.—On the 14th of Feb. the number of permanent residents was 1,211. More than doubled in eight months.

## **Opinions of the Press.**

From the New Orleans Delta.

#### **ON THE PACIFIC RAILROAD.**

NEAR THE THIRTY-SECOND PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

NO. IV.

The question which we propose to discuss in this number, is that in relation to the profits of the road, and the advantages to those portions of the country immediately and very nearly connected with it.

Capt. Homphreys' estimates are, as I have good reason to know, made on the *minimum* of what the road would yield when first put into operation. He means that a progressive increase will take place. His valuable remarks on this subject are to be found from pages 83 to 87 of his Examination. He supposes (p.86) the minimum earnings of the road to be ten millions of dollars, the costs of repair four millions, and clear profit six millions; and the entire expenditures, including depots and equipments, to be \$93,170,000 to San Francisco; \$68,990,000 to San Diego or San Pedro. This would give, including lesser fractions, &c., 40-100 as the interest on investments at the start. The main items of which he speaks are most judiciously classed, but we think there is one omitted as a source of profit which may be justly introduced: we mean flour and provisions. We do not think that a large trade would immediately arise with Asia and South America, in those articles; but we deem it extremely probable, considering the vast population of Asia, that wheresoever the facilities of a great trade shall arise in this respect, that some trade every year, and a great trade in years of scarcity, would exist. These years of scarcity may be reckoned one in eight. It is now eight years since the United States exported to Europe (1847) more than forty millions of dollars of provisions—principally flour and other grain, and corn meal. This year, according to appearances, the export of flour and provisions thither will



be little short of thirty millions. Asia is vastly more populous, and in a year of scarcity in China, the demand must be immensely greater. The check on the trade, however, is so great from fewer facilities, or, rather, from greater distance—in case the railroad should be constructed—that the amount of profit will not exceed that of the trade in flour and provisions with Europe.

Captain Humphreys justly remarks, that "the light freight which is now carried by the Isthmus route, costing \$394 per ton, and which, when the Isthmus Railroad is completed, is to cost \$169 per ton, would take the Pacific Railroad route—since, allowing 5 cents per ton per mile for this road, the cost per ton from Fulton to San Francisco will be \$105; and thence to New Orleans or Memphis by railroad, \$10 per ton additional.

"To transport a barrel of flour from Fulton to San Francisco, would cost, according to Capt. Humphreys, from \$8 to \$10 per barrel, or from four to five cents per pound, (about double the cost now paid by sea to San Francisco,) and a barrel of pork from six to seven and a half cents per pound, and the same for provisions generally."

On this we would observe that the deterioration in the value of flour by passing, as it must, twice through the tropics in going to San Francisco or San Diego, will counterbalance the increase of expense by railroad transportation. And, I think, the transportation of flour may be afforded at 3½ cents per pound, or seven dollars per barrel. In a year of high prices in Asia this expense would not prevent a great trade. It would sell at from \$15 to \$20 per barrel.

The transportation of the mails would be a source of profit at once to the value of half a million of dollars.

In the years 1852-3 the importation of tea into the United States was 22,321,417 pounds. The earnings from this source may be justly estimated at \$1,000,000.

The transportation of troops from Fulton to San Francisco, may be estimated at \$60 per man.

Merchandise of various kinds, manufactured goods of cotton, silk, flax, hemp, would be light freight, and would be computed in such a manner as to yield, say an average of five per cent., ad valorem.

Let us now sum up an estimate, embracing periods each of five years average, and progressively increasing at a reasonable per centum every five years. The way-travel also will be estimated separately, as in the first five years, one-fifth of the through travel and one-fifth the price, and as one-fourth of the through travel each five years afterwards.

#### FOR THE FIRST FIVE YEARS.

|   |              |
|---|--------------|
| Through travel, 50,000 each way, from Fulton to San Francisco, or other points on the coast in California, at \$10 each; this is 100,000 and amounts to | \$13,000,000 |
| Way travel, 1-5th at an average of 1-5th price, 10,000  | 260,000      |
| On forty millions of dollars of manufactured goods at a rate (by the cubic foot or otherwise) of 5 per cent.  | 2,000,000    |
| On Teas, 22,000,000 pounds.   | 1,000,000    |
| Transportation of mails.  | 500,000      |
| Transportation of troops, \$60 per man, say 1,000 each way.   | 120,000      |
| 100,000 barrels of flour and 50,000 barrels of provisions, at seven dollars per barrel.   | 1,050,000    |
|   | \$17,930,000 |
| Cost of repairs and new equipments  | 5,500,000    |
|   | \$12,430,000 |

The gross estimate is greater than one of Capt. Humphreys' suppositions—supposing 100,000 passengers to and fro—only by \$930,000—but if we suppose only 50,000 passen-

gers, i.e., 25,000 each way,—which is about the present number,—then it will be \$6,500,000. Capt. Humphreys' estimate of the cost of repairs is \$4,000,000.

Average for the next five years, or from the 6th to the 10th inclusive. Increase of passengers 20 per cent. This will give 60,000 passengers.

|   |             |
|---|-------------|
| To and fro at \$130 each                            | \$7,800,000 |
| Way travel  | 312,000     |
| Average increase of 10 per cent. on the other trade | 467,000     |
|   | \$7,579,000 |

Amount of that trade as estimated in the first five years 4,670,000 |

Cost of repairs and new equipments \$13,249,000 |

Net per cent profit 7-88 6,000,000 |

It is but reasonable to conclude, that in a country so sparsely populated as the United States, this average profit will go on increasing at a compound ratio of 10 per cent. every five years for fifty years.

We will exhibit this increase in detail for two decades or four periods, of five years each, additional 20 per cent. on 60,000 passengers, gives 72,000 through passengers:

|   |             |
|---|-------------|
| At \$130                                      | \$9,800,000 |
| Way passengers, one-fourth at one-fifth price | 18,000      |
| Revenue from other sources                    | 468,000     |
|   | 5,137,000   |

Total \$15,405,000 |

Cost and repairs per annum 6,500,000 |

Net revenue each year from the 11th to the 15th inclusive, or about 9.55 per cent. \$8,905,000 |

From the 16th to the 20th year, 20 per cent. on 72,000 passengers:

|   |              |
|---|--------------|
| Gives 86,400 passengers   | \$11,232,000 |
| Way-passengers, one-fourth in number, one-fifth in price, 21,600 at twenty-six dollars each | 539,600      |
| Revenue from other sources with 10 per cent additional to that of the previous five years   | 5,650,000    |
|   | \$17,421,600 |

Deduct for cost of new equipment and repairs 7,421,600 |

\$10,000,000 |

From the 16th to the 20th year—clear income ten millions of dollars, or on the original capital 10.34 per cent. We have said we could pursue this calculation to the 30th year, and though it may seem tedious, yet, as it is based upon minimum data, it is worth close attention.

From the 21st to the 25th year, inclusive: Increase of passengers, 20 per cent. on the preceding year, gives (103,600—at \$130) per annum \$13,468,000 |

|   |           |
|---|-----------|
| Way passengers, one-fourth in number, at one-fifth price                                      | 673,000   |
| Revenue from other sources, with 10 per cent. additional for that of the preceding five years | 6,215,000 |

Average income per year, from the 21st to the 25th year inclusive 20,356,000 |

Deduct for cost of new equipment and repairs 8,000,000 |

12,356,000 |

Clear income 12,356,000 |

Which is within a very small fraction of 13.3 per cent. on each \$100 originally invested.

Last calculation, or from the 26th to the 30th year inclusive:

|   |              |
|---|--------------|
| 20 per cent. on the average number of passengers in each of the preceding five years, that is, on 103,600 passengers, gives an average in the five years, now to be computed of 124,320 | \$16,161,600 |
| Way passengers, one-fourth in number, and one-fifth in price  | 742,080      |
| From other sources of revenue last five years, with 10 per cent additional  | 6,836,000    |
|   | 24,252,680   |

Deduct for new equipments and repairs 8,500,000 |

Clean income of each year from the 26th to 15,752,680 |

the 30th year 15,745,680 |

Or 16.93 per cent. on every one hundred dollars of the original investment. We might

have said of the ten years' preceding clear income, that it was the greatest clear income from any equal amount of investment in the world, being respectively ten and three-fourths and thirteen and three-tenths per cent., but still more is this. And it may be regarded as a fixed fact that year after year, *in perpetuity*, it will not average less than fifteen per cent., after twenty-five years.

Upon these *minimum* estimates, it begins at about the lowest legal rate of income on money, and steadily increases. Any one who will take the pains to make an accurate estimate of the rate of progress at which we calculate the business, and consequent income of the road, will find that the average increase is about four per cent. per annum compound interest. And yet the lowest *legal* rate of interest on money is six per cent., and in a prosperous community, such as the United States, such has heretofore been the average increase in the value of property, it is nearer ten per cent. per annum than five. The number of way-passengers is, in our estimate, probably after the first ten years, not more than one-third of what they will really be.

Our opinion is that the road should be opened every twenty-five miles—that is, when each twenty-five miles is finished, a certain amount of locomotive power should be placed upon it. It is altogether probable that the same amount which answers for that distance, will answer for a hundred miles, as a general rule. Thus some income would be derived from the road from the very first year.

But if the amount of revenue to be derived after construction is great, the amount of value which it will confer on property near the road, say within fifty miles of each side of it, will be immensely greater.

The road will run from Preston, or whatever other place is selected for its crossing the Red River, through a part of the Red River Valley of exhaustless fertility, and most heavily timbered; this timber being of the largest size and best quality—oak, pecan, hickory, elm, &c. Of the character of the soil and its adaptation to cotton, where such timber grows, we need not speak to any intelligent planter of Louisiana, or of any part of the Southwest.

The valleys of the Trinity and its tributaries—of the Brazos and its tributaries—of the Colorado of Texas and its tributaries—are eminently fertile and well watered.

The road runs through all the valleys we have mentioned on its Eastern terminus, from the crossing of Red River to the Eastern verge of the Llano Estacado, 352 miles. Thus it almost begins in a most beautiful section of country East for a long distance, where its utility would be immediately developed in an increase of the value of lands near it, according to their proximity and fertility. The effect on value of land may be fairly calculated at from two hundred to one hundred per cent. over this entire area, fifty miles on each side and three hundred and fifty-two in length; or an area of 352 by 100 miles, equaling 35,200 square miles, or twenty-two millions five hundred and twenty-eight thousand acres. Averaging this land at two dollars per acre, in its present state, we find its value forty-five millions and fifty-six thousand dollars, and its value, merely doubled by the railroad, would give that sum of augmented value to the property of men owning it—all to accrue within two years, and six months from the commencement of the railroad; for at a rate of one hundred and fifty miles per year to each end of



the road, on three hundred miles to be constructed for the whole road, it would reach 350 miles in two years and four months. But beginning at Fulton, which is 449 miles from the Llano Estacado, the road would not reach the Llano until the end of the third year. The augmented value, however, of the lands in the ninety-seven miles from Fulton to the crossing of the Red river, would be as great, according to quality, and greater in amount per acre, because portions of it are already under cultivation. The increased value of lands alone, at the end of three years, may be fairly estimated at seventy millions of dollars; more than enough to build the road to San Diego. The regions through which it will pass will produce wheat, corn, hemp, tobacco, cotton; but, in the words of Captain Pope respecting it, page 38, from its peculiar character, cotton would doubtless be the most valuable and general of its productions. Within four years from commencement of the road, fifty thousand bales of cotton, additional and beyond what otherwise would come from those regions, would find a market at New Orleans. Supposing the bale to weigh four hundred, this would give, at 9 cents per pound, \$1,800,000.

|                             |             |
|-----------------------------|-------------|
| 5th year, 70,000 bales..... | \$2,520,000 |
| 6th " 90,000 " .....        | 3,260,000   |
| 7th " 120,000 " .....       | 4,230,000   |
| 8th " 150,000 " .....       | 5,400,000   |
| 9th " 180,000 " .....       | 6,480,000   |
| 10th " 210,000 " .....      | 7,560,000   |

Or nearly eight millions of dollars per annum, at the end of ten years, and an average from the sixth to the tenth year, of \$4,474,333 (four millions four hundred and seventy-four thousand three hundred and thirty-three) of annual trade poured into the city of New Orleans at the end,—beyond what would otherwise flow into her market—from the construction of this railroad, and this does not include a single pound of tobacco, bushel of wheat, corn, or bale of hemp, many of which, no doubt, part of this region would supply in this lapse of time. Are not those considerations founded in a most calm, deliberate, and by no means exaggerated view of the subject, worthy of the attention and business patronage of the merchants and planters of Louisiana, and of all the Southwestern States? But there are views which present themselves, of a constitutional and national character, which show that this is a work in which the whole nation is interested, and which, in its might, it should rouse itself to construct. Of these, in our next article.

From the Nashville Ch. Advocate, Feb. 20.

#### THE SOUTHERN PACIFIC RAILWAY.

We take pleasure in calling the attention of our readers to this great work, which is now being constructed from the eastern boundary of Texas, near Shreveport, La., to El Paso, on the Rio Grande. We have looked forward with much interest to the commencement of this gigantic enterprise. The great magnitude of the project, the uncertainty of success by private means, and the want of information as to the practicability of the route, have afforded reasonable ground for doubt as to the success of the vast scheme proposed by the Texas Western Company. But recent information shows the route not only practicable and entirely feasible, but in every sense of the word far superior and more desirable than any other route within the limits of the United States. And the well known fact that the State of Texas has appropriated sixteen sections of land for every mile of road constructed, will clear away the

doubts in the minds of the public as to the ability of the company to complete the work.

We have gained much valuable information from Col. C. Bradley, the enterprising agent of this great enterprise, now in this city for the purpose of disposing of the stock of the Company.

This road is located along the parallel of 32 degrees north latitude, crossing the best portions of Texas, and opening up to immediate emigration the largest body of valuable vacant land in the State.

In regard to climate, this latitude and its vicinity, for one or two degrees on either side, is well known to be one of the most favored regions of the world. It is not subject to the same extremes of temperature as those which lie nearer either to the equator or the pole. While uniting the quality of those zones between which it forms a transition, it combines the advantages and productions of both. The prospective value of the munificent grant of Texas to this Company, is almost beyond estimate. Let us examine the strip of territory granted by the State of Texas for the construction of this road. When completed, the road we set down at eight hundred miles in length, sixteen sections to the mile, will make 12,800 square miles. This is nine times as large as the State of Rhode Island, six times as large as the State of Delaware, larger than New Jersey, Rhode Island, and Delaware together; and the whole united territory of those rich and populous States of Massachusetts and Connecticut falls short of this princely grant.

How then shall we estimate the value of this domain? It is unsurpassed in fertility of soil and salubrity of climate; possessing all the great natural resources which, when developed, make a highly civilized and populous country. With this road extended through them, they—the lands—would be sought after, and command a high price. This road is now being constructed: 100 miles are under contract, and a strong force at work. As soon as 25 miles are completed and equipped, the company will be in possession of 256,000 acres of land.

As a matter of investment or speculation, no other enterprise presents the same inducements as this Texas Western Railroad. By securing this 5 per cent. stock, the holder becomes a joint partner in all the rights, interests, privileges, lands, and other property of the company. This will be the great trunk road of the South and West, and will soon be extended to the Pacific. California and Oregon are being rapidly peopled; Utah and New Mexico will soon be knocking at the door of the Capitol, as free, sovereign, and independent States. And the two sides of this great confederation, the Atlantic and Pacific, will soon be united by this iron band.

#### PACIFIC RAILROAD.

In the excitement and contention of the past two years, a matter which was once held to be of the very first importance to the nation, has been almost entirely overlooked. It is the Pacific Railroad. No work at the present age is demanded more earnestly by the business of our nation and the civilized world. No work would effect more extensive or valuable changes. None would be more durable—for time would only enhance its importance.

From an article in the *Louisville Journal* we condense the following facts:

Texas has granted 16 sections, 10,400 acres a mile to a company, for a Pacific Road. The distance through Texas is 700 miles, the grant amounts to 7,280,000 acres. This land it is estimated when the road is finished, will be worth five dollars an acre, forty millions for the whole. This company has secured their charter, made a contract for construction, set men to work, and raised large subscriptions. The route is to run from Fulton, Arkansas, to El Paso on the Rio Grande, on the parallel of 32 degrees north latitude, thence to San Diego on the Pacific.

It is estimated that this forty millions of dollars will almost construct the road to San Diego, the cost being only 68 millions. Several other routes have been surveyed under the direction of Congress, at a cost of some \$150,000. The reports of the Engineers have been published; from them we take the following facts:

The route from St. Paul to Vancouver is, estimating ascents and descents 2,207 miles, cost 130,000,000 dollars. Distance to New York, 3,397 miles from Vancouver. The route from Council Bluffs to Benicia is, estimated, as before, 2,533 miles, costing 116,000,000 dollars. Distance to New York from Benicia 3,835 miles.

The route from Westport, mouth of Kansas river, near latitude 39 degrees north to San Francisco, is estimated as before, at 3,125 miles, cost so great as to make route impracticable. This is on a line almost due west from Indianapolis. Distance to New York from San Francisco is 4,345 miles.

The route from Fort Smith to San Pedro, 35 degrees north, is estimated, as before, at 2,815 miles, costing 169,000,000 dollars. Distance to New York from San Pedro 4,161 miles.

The route from Fulton to San Pedro, 32 degrees north, is estimated, as before, at 2,239 costing 68,000,000 dollars, and to San Francisco 94,000,000. Distance from San Pedro to New York, 3,574 miles. Distance by this route from San Francisco to New York, 4,106 miles.

Jeff. Davis in his report as Secretary of War, recommends the latter route as the most, economical and favorable for construction.

Among our people, we think, of all parties decided action by Congress to commence and build a road, either by a company or by the government, would be most heartily approved. We do not think with the *Louisville Journal* that it is impossible to get Congress to act upon this question. A route central in its location, running through northern Kansas, or Nebraska on the Council Bluffs line seems better suited to the wants of the whole people than one through Texas. It will be sooner settled, and will strike the Pacific near San Francisco, accommodating Oregon and California.

Let the public, by petition and otherwise, express again their desire to have such a road, and Congress will be constrained to do something that will set on foot the greatest enterprise of modern times. The Texas plan of giving land is a very good one. Nothing will be lost by it, for it will add such a stimulus to the Great West that the value of government land thus increased will amply compensate for the diminution of quantity. If memorials were put in circulation at an early day, Congress might have more than one important question to decide.—*Indianapolis Republican*.



[From the Huntingdon Journal, Dec. 19.]

### THE GREAT PACIFIC RAILROAD.

The work in progress through Missouri, of which we have made frequent notice, is intended as the first link of a great road to the Pacific, through what may be termed the central route. Its advocates have heretofore set forth its prospective advantages, and look forward to great results.

There is another scheme which is also pressed upon the public attention, and for aid to which an application is to be made to Congress at the coming session. The Hon. Thomas Butler King has addressed to some New York capitalists an elaborate letter, going somewhat into detail, upon what he deems the advantages of the southern route, through Texas. We transcribe, from the *N. O. Picayune*, a synopsis of Mr. King's views, omitting some passages not essential to the understanding of the subject:

Mr. King condemns as unwise and impracticable, from their utter unwieldiness, the propositions which seemed to find favor in the last Congress, for undertaking three roads at a time. One is sufficient for all wants of the country for many years; and, what is more decisive, three could not be built. It is an undertaking beyond our capacity, and would be a waste if it could be accomplished. The building of one road is as much as the next Congress can hope for under the most judicious counsels, and with the most liberal disposition on the part of Government and capitalists, and facts have reduced the choice of routes to two, the extreme northern and the extreme southern of the lines surveyed.

The extreme northern route is that which extends from Chicago, through the States of Illinois and Iowa, around the Great Bend of the Missouri, and crossing the depression in the Rocky Mountains at or near the point of the Hudson Bay Company's portage, to the waters of the Columbia river; thence, across the great basin and the Cascade Mountains, to Puget's Sound, or descending the gorges of the Columbia river for many hundred miles, through the territory of Oregon, to the mouth of that river.

The line of 32° he considers geographically a better central line for the free States, or Northern, than the line of 48½, without taking into consideration at all the claims of the South. But he proceeds to maintain that the line through Texas and across the country recently acquired from Mexico by the Gadsden treaty, is practical, central, and absolutely the best and only one really and speedily practicable. The point of commencement for the single road he places on the eastern line of Texas, which affords the greatest facilities for connecting it with the railways which are extending in that direction from St. Louis, Cairo and Memphis, through Arkansas, by way of Little Rock and Fulton, from Vicksburg, Mississippi, to Shreveport, and from New Orleans by the Opelousas railroad, thus bringing the system of railways throughout the Union, North and South, by converging lines, to that point on the Eastern border of Texas, and connecting them with the line under consideration to the Pacific. These railroads are all in a state of progress, and their ultimate completion cannot be delayed beyond a very few years. Connecting as they do with the railways in the Southern, Middle and Northern States, their completion will open a railway communication from New York and all other Atlantic cities and New Orleans,

more than half the distance across the continent, from the Atlantic.

The route from this point to the Pacific, as surveyed by Col. A. B. Gray, is 1,521 miles long, through a mild and salubrious climate, free from snow and ice, and practicable throughout the whole year. Mr. K. gives a glowing description of the fertility and mineral riches of the country through which it passes, and his calculations of the business of the road and its profits as an investment, are very large and sanguine.

A round estimate of the cost of the road is \$45,000,000 to \$50,000,000, from the Eastern point designated to the Pacific, at San Diego, and \$55,000,000 to San Francisco, with a gross annual receipt for freight and passengers of \$26,000,000. These, however, will bear a great deal of scrutiny before they are taken to be certain.

The basis of the credit to raise these means is thus stated: First, the grant from Texas of ten thousand two hundred and forty acres of land for every mile of road constructed within her limits, or for the supposed distance on the route indicated in the law, from the Eastern line of the State, opposite the town of Shreveport, in Louisiana, to El Paso—seven hundred and eighty-three miles of road; 7,017,920 acres, at five dollars an acre, would be \$35,089,600; a contract to be made on the part of the United States, to pay for a term of at least fifteen years five millions per annum, for the transportation of mails, troops, and munitions of war, together, with an appropriation of land through that portion of New Mexico acquired under the Gadsden treaty, of at least twenty sections to the mile, for a distance of 578 miles, or 7,398,400 acres; and a grant to be obtained from Congress to the State of California of thirty sections, or 19,200 acres of land per mile, for the distance the road may be constructed in that State.

It will be seen that the work is designed to be under the management of a private company; but the basis of the credits upon which it relies, is to be found in grants of land already made in Texas, grants expected from the United States, and appropriations to the extent of five millions per annum from the treasury, as advance payments on services to be rendered after the road is completed.

[Bicknell's Reporter, Philadelphia.]

### A RAILROAD TO THE PACIFIC—A SOUTHERN ROUTE.

The Cincinnati *Railroad Record* gives several elaborate articles in relation to a railroad to the Pacific, by way of Texas. The *Record* was formerly in favor of a more northern line, but after a full investigation of the subject, it avows its preference for that sketched by Col. Gray. According to that gentleman, the land grants of Texas for the construction of the road, may be estimated at the enormous sum of \$44,789,760, and the cost of the road through Texas at about \$20,000,000; so that the road could be constructed on that basis, through the whole breadth—seven hundred and eighty-three miles—and a fund be still left of nearly twenty-five millions of dollars. From El Paso to the California, the estimate of Col. Gray asks for \$16,200,000 for the building of the road, and \$8,631,620 for the road from the portion of California to San Pedro, or San Diego. The whole cost of the road, therefore, is set down as less than the sum which its construction would realize from the land grants of Texas; but the sum depends on the completion of the road

throughout. As a partial road, local for Texas and the East, it would not pay at all, as Governor Pease, in his late message, explains at length. The *Record* thinks it is within the region of possibility that this basis for such a work can be made available, and really it looks very plausible on paper. The magnitude of the undertaking has, however, discouraged many, who have still confidence in the computations and faith in the grand results which they promise. The *Railroad Record*, acknowledging the force of these difficulties, is hopeful that they may be overcome. To accomplish it, demands "a great concentration of means, great energy in the prosecution of the work, and an untiring and indomitable perseverance. These qualities are hard to unite, but such things have been done, and why not in the enterprise which offers such an immense and glittering premium to talent and capital?"

TEXAS WESTERN RAILROAD—PROGRESS OF THE WORK.—Our readers will find below, an interesting letter relative to the present condition and progress of this road.

[From the Nashville Patriot.]

TEXAS WESTERN R. R.

NASHVILLE, March 7, 1856.

MESSRS. EDITORS:—I have been to Marshall, Texas, and have examined part of the work now being done by the Texas Western Railroad Company, and about one hundred miles of the country through which the road will pass. As the principal office is in New York, I did not learn as much about their financial affairs as I would have been glad to have done; but from what I did see and learn, I was induced to increase my subscription to double the amount heretofore taken.

I think Texas is offering the greatest inducements to men of business and capital to build railroads there, of any other place I have seen or heard of, and I think investments made in this or other roads will pay well, if the affairs of the companies are well managed; and I will here state that I intend to make other investments there, for I think Texas will soon be ahead of many of the States, if she will continue to carry out that wise policy recently adopted in her internal improvements, for she certainly has great ability, both in money and lands.

The surface of the country is well adapted for the building of roads, with abundance of timber, in some parts of which will be found quantities of pine, suitable for building purposes. Railroads are much needed in that country, as the people are paying a heavy tax for their transportation, which is all done by ox teams. I passed more than two hundred of these teams in one day's travel, from Marshall to Shreveport.

Very respectfully, yours,  
SAM'L W. ADKISSON.

### SHIP BUILDING IN MAINE.

The *State of Maine*, published at Portland, gives a list of the vessels built in the district of Bath, in that State, during the last year. From this list it appears, that in all, 70 vessels have been built in this district—47 ships varying in burden from 500 to 1,500 tons each, 4 barks of from 400 to 500 tons each, 6 brigs, 7 schooners and 8 boats of from 7 to 62 tons each, making an aggregate 50,900 and 91-95ths tons added to the Commercial navy of the country in one year in this district.



[From the Henderson Reporter.]  
PACIFIC RAILROAD.

This great national project is at present attracting a large share of public attention throughout all the States, and even our young sister beyond the Rocky Mountains sends back an earnest echo in favor of this gigantic American enterprise. It is high time that the people of the United States began to think more deeply, generally, and systematically, upon this important subject. It is also time that some scientific, reliable, and disinterested information, in the way of surveys, estimates and statistics, be supplied for the consideration of every citizen; and such information should be derived from a source that would at once free it from the suspicion of being the invention of the directors of some huge speculation.

The people want light upon this matter, and as the road itself cannot but be regarded as a great national enterprise, and cannot be speedily, if ever, constructed without national aid, it appears to us to be clearly the duty of Congress to take the initiatory steps, as soon as possible, to furnish that reliable and justifying information which should ever be a prerequisite to the expenditure of large amounts of money in any enterprise, whether public or private. Although the great mass of the people are looking with much apparent favor upon the project now, yet it is only upon the presumption that the very best route will be selected, and the work placed under the most energetic and economical management, that their consent is thus foreshadowed.

The Pacific Railroad promises ere long to become one of the great questions of the day. To carry on this mighty project to completion; to lay down the iron road that shall accommodate the trade and travel of two hemispheres, embracing every kind of climate and production; the teas of China and the spices of India freighted on the same train with the furs of Siberia, is a work which may well claim the attention of our country as a whole.

The Legislature of Tennessee has moved almost in a solid phalanx, in a series of very able and intelligent resolutions, in which the Members of Congress from that State are instructed to use their utmost exertions in behalf of the great Southern route through Texas. In the address of the Committee, accompanying the resolutions, we find the following:

"It is the greatest enterprise of the age, and as a national scheme, should have appropriated to it, in the language of the resolutions, 'all the patronage and means consistent with the policy and powers of the General Government.'"

For precisely the same reasons that actuate the people of Tennessee, with others in addition, is this a matter of first importance to Kentucky. Our railroads are, to a greater or less extent, extending in the direction where the main trunk of the Pacific Road will terminate. At any rate, we seriously believe the subject one of sufficient importance to attract the attention of our next Legislature, whatever may be its conclusion.

### SOUTHERN PACIFIC,

OR,

Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONELING.

Feb. 14

109 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 60 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD.

## SUPPLEMENT.

CINCINNATI, MONDAY, MARCH 24, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, . . . . . EDITOR.

W. WRIGHTSON, } ASSOCIATE EDITORS.  
T. WRIGHTSON, }

CINCINNATI, . . . . . MONDAY, MARCH 24.

#### THE PACIFIC RAILROAD CAN BE BUILT EASILY AND RUN SAFELY.

We have been in no small degree astonished at finding some intelligent persons among the members of Congress affect that the Pacific Railroad *would* not be soon made; or that it *could* not be made or run. Among this class of persons was the Hon. Mr. CLAYTON, of Delaware, who announced in the Senate that, in his opinion, the early completion of the Pacific Railroad was a delusion. For this opinion he gave no reasons, and we are obliged to think, has given little attention to the subject. Indeed, the greatest difficulty connected with the subject is that members of Congress, who *ought* to think such a national enterprise as the Pacific Railroad of the highest importance, make it secondary to what they call the "issues" and "platforms" of transient party controversies.

After this real, though not professed, neglect of the subject, the next greatest difficulty is to make men of apparent intelligence comprehend the bare elements of the question. For example, it is now frequently (though by no means so often as a short time since,) asserted that the Pacific Railroad *cannot* be made. If not, *why* not? The last objection we have heard is that it cannot be made in a "wilderness," and through "mountains," and among "Indians!" One would think, to hear such persons talk, that we were living at least a thousand years back; that no road was ever made in a new country; that no railroad ever crossed a mountain; and in fine, as the Chinese say, we are only "outside barbarians." Now, as to the first objection, that the road will run through a *wilderness*; this is of no force, except as to the supply of provisions, fuel, &c. But, does not the objector see that a railroad carries its provisions, fuel, &c., with it, as it is constructed? This is one of the peculiarities of a railroad. A Pacific Railroad will be constructed out from *both* ends, and as it is made, will supply the operators with all that they need.

Secondly, The "mountains" present no other difficulties than those presented by *climate*. That this is great on the northern route, is admitted; but this is an objection not applicable in *any degree* to the Texas route. The *summit*, on the parallel of 32°, is at least 3,000 feet less than on the middle or northern routes.

The climate is mild, and *no* obstruction from snow and ice exists on the Texas route. 'This is one of the facts in relation to the southern route, which is *not to be got over in any way*.

Thirdly, As to the *Indians*. Does not every one know that the road, as it proceeds, must have station houses and depots—each one of which becomes a point of *d'appui*, easily defended? The truth is, a railroad is the easiest thing defended on earth. So far from the Indians attacking it,—they will take good care to keep out of its way.

In truth, there are no particular objections to the construction of the Pacific Railroad, except those which arise from the immense amount of *labor* and *money* which is required. Now, the way to consider this is to compare the magnitude of the undertaking with what has been done. Let us look at it in that way:

1st. The Pacific Railroad requires 2,000 miles of road—\$100,000,000 of money. The money estimate is very high—\$50,000 per mile—so that we do not dodge the difficulty.

2d. Supposing this all to be done in five years, it will be 400 miles per annum, and \$20,000,000. This will require 60,000 laborers.

3d. Compare this work with what has been done. In the year 1855 about 3,000 miles of railroad were made in the United States, whose cost was \$100,000,000, and which employed 280,000 laborers. It appears then, that in fact the United States have made, in a *single year*, much more railroad than is required for the whole Pacific Railroad. But it is not required in a single year. If the Pacific Railroad were made in five years from its commencement, it would be more than its most sanguine friends expect. But this would be doing in one year only *one-fifth* of what is actually done each year in the United States. For that men and money can easily be found; provided Congress furnishes the *inducements*; and it is the duty of Congress to do that. It will be a poor excuse before the *people* to talk of Indians, mountains, and wildernesses! The people are far more sagacious and intrepid than their representatives, and will hold the latter to a strict account for any neglect of so important a subject as the means of communication and defense to our Pacific possessions.

Lastly, when the Pacific Railroad is made on the southern route, it can be *easily* and *cheaply* run. On the parallel of 32° it will be neither disturbed by Indians, nor the far more fatal danger of ice and snows. Cars running in that equable climate will be run easily and

cheaply. The difference in expense alone will be equivalent to half the cost of a road on the northern routes. But let Congress move—no matter what route is taken. Let them not shrink from what, in comparison with the mighty *power* of this nation, is but a petty enterprise.

#### POPULATION AND WEALTH OF THE UNITED STATES IN 1855; SHEWING FIVE YEARS' INCREASE OF THE REPUBLIC.

We present below a carefully prepared table of the population and wealth of the United States in 1855. As the first consideration in such statistics is *accuracy*, we give the *data* on which it is prepared. *First*, Nine of the States, and some of them the largest, such as New York and Massachusetts, have taken a State census in 1855. *Secondly*, Several, such as Ohio, have taken an enumeration of the white males over 21. *Thirdly*, Twelve or fifteen States have furnished an assessment of all taxable property. *Fourthly*, The votes given in other States, at the annual election, though not full, give some criterion of the progress of the State in population. Thus the *vote* of Texas more than doubled in three years, proving conclusively the very rapid progress of population.

The data are sufficient to obtain a very near approximation to the actual truth, in regard to the population and wealth of the country. When, after ascertaining the details, as nearly as possible, the general aggregate was arrived at, it was such as to correspond with the known progress of the country—modified by the peculiar circumstances of the last few years.

1st. *As to Population*.—The entire growth of the last five years is 18½ per cent., or 3.7 each year. The annual growth of the previous ten years was 3.6. The slight increase in the *ratio* during the last five years was undoubtedly due to the foreign immigration, which, in that period, was altogether unprecedented.

2d. *As to Wealth*.—This is far more difficult to obtain than population; for all public assessments for taxation are notoriously below the true value. In the following table, the valuation of Massachusetts, New York and Ohio are very near the truth, while those of Pennsylvania and Tennessee are not more than half the actual value. Nevertheless, these assessments may serve to show the *relative* advance in wealth. In fact, we have no doubt that the *true* value of property in the United States exceeds *ten thousand millions of dollars*, or one-fourth greater than that in the table.



TABLE OF THE POPULATION AND WEALTH OF THE UNITED STATES IN 1855.

| STATES.                | POPULATION. | INCREASE.   | WEALTH.         | INCREASE.   | REMARKS.                                  |
|------------------------|-------------|-------------|-----------------|-------------|---|
| Maine.....             | 655,325     | 9 per cent. | \$130,000,000   | 6 per cent. | Estimate.                                 |
| New Hampshire.....     | 354,750     | 10 " "      | 105,000,000     | 2 " "       | " "                                       |
| Vermont.....           | 325,000     | 3 " "       | 78,016,630      | 8 " "       | State assessment.                         |
| Massachusetts.....     | 1,133,123   | 14 " "      | 600,000,000     | 4 " "       | State census and estimate of property.    |
| Connecticut.....       | 400,000     | 8 " "       | 203,739,831     | 30 " "      | State assessment.                         |
| Rhode Island.....      | 155,000     | 5 " "       | 84,000,000      | 5 " "       | Estimate.                                 |
| New York.....          | 3,470,059   | 12 " "      | 1,492,849,504   | 30 " "      | State census, and valuation.              |
| New Jersey.....        | 530,000     | 11 " "      | 170,000,000     | 11 " "      | Estimate.                                 |
| Pennsylvania.....      | 2,542,960   | 10 " "      | 548,731,304     | 10 " "      | State assessment.                         |
| Delaware.....          | 95,000      | 5 " "       | 25,000,000      | 5 " "       | Estimate.                                 |
| Maryland.....          | 645,000     | 11 " "      | 243,537,091     | 10 " "      | State assessment.                         |
| Virginia.....          | 1,550,000   | 8 " "       | 465,542,189     | 20 " "      | " "                                       |
| North Carolina.....    | 920,000     | 6 " "       | 230,000,000     | 2 " "       | Estimate.                                 |
| South Carolina.....    | 702,000     | 5 " "       | 295,000,000     | 3 " "       | " "                                       |
| Georgia.....           | 1,120,000   | 22 " "      | 400,000,000     | 20 " "      | " "                                       |
| Ohio.....              | 2,275,000   | 25 " "      | 866,929,982     | 72 " "      | Census of white males and state valuation |
| Indiana.....           | 1,180,000   | 20 " "      | 299,478,148     | 40 " "      | State assessment.                         |
| Illinois.....          | 1,300,250   | 53 " "      | 375,000,000     | 140 " "     | State census.                             |
| Michigan.....          | 515,600     | 29 " "      | 150,000,000     | 150 " "     | " "                                       |
| Wisconsin.....         | 552,109     | 81 " "      | 75,000,000      | 75 " "      | " " and valuation.                        |
| Iowa.....              | 345,985     | 60 " "      | 72,327,204      | 210 " "     | Based on the increased vote.              |
| Kentucky.....          | 1,080,000   | 10 " "      | 465,830,168     | 33 " "      | State assessment.                         |
| Tennessee.....         | 1,102,000   | 10 " "      | 219,011,000     | 6 " "       | " "                                       |
| Alabama.....           | 833,266     | 8 " "       | 250,000,000     | 19 " "      | State census.                             |
| Mississippi.....       | 720,000     | 17 " "      | 250,000,000     | 11 " "      | Estimate.                                 |
| Louisiana.....         | 600,000     | 16 " "      | 299,996,176     | 30 " "      | State assessment.                         |
| Florida.....           | 110,725     | 26 " "      | 49,461,461      | 100 " "     | State census.                             |
| Missouri.....          | 850,000     | 24 " "      | 175,000,000     | 30 " "      | Estimate.                                 |
| Arkansas.....          | 247,112     | 19 " "      | 55,377,000      | " "         | State census.                             |
| Texas.....             | 370,000     | 75 " "      | 110,000,000     | 100 " "     | Based on the increased vote.              |
| California.....        | 400,000     | 300 " "     | 66,000,000      | 200 " "     | Estimate.                                 |
| Minnesota.....         | 40,000      | 500 " "     | 3,200,000       | 1,000 " "   | " "                                       |
| Kansas.....            | 30,000      | " "         | 1,000,000       | " "         | " "                                       |
| Nebraska.....          | 5,000       | " "         | 500,000         | " "         | " "                                       |
| New Mexico.....        | 63,000      | 2 " "       | 6,000,000       | 20 " "      | " "                                       |
| Utah.....              | 30,000      | 15 " "      | 2,000,000       | 100 " "     | " "                                       |
| Oregon.....            | 26,000      | 100 " "     | 6,000,000       | 20 " "      | " "                                       |
| Washington.....        | " "         | " "         | " "             | " "         | " "                                       |
| Dist. of Columbia..... | 55,000      | 10 " "      | 18,000,000      | 8 " "       | " "                                       |
| Aggregate.....         | 27,368,664  | 18½ " "     | \$8,030,567,884 | 14 " "      | " "                                       |

Some curious deductions may be drawn from this table in regard to the growth of the various sections of the Union. Dividing the Union into the North-Eastern States, the South-Eastern, the North-Western, and the South-Western, and disregarding the Pacific States, we have these results:

## 1. NORTH-EASTERN.

|                    | 1850.     | 1855.     |
|--------------------|-----------|-----------|
| Maine.....         | 583,169   | 655,325   |
| New Hampshire..... | 317,976   | 354,750   |
| Vermont.....       | 314,120   | 325,000   |
| Massachusetts..... | 994,514   | 1,133,123 |
| Connecticut.....   | 370,792   | 400,000   |
| Rhode Island.....  | 147,545   | 155,000   |
| New York.....      | 3,097,394 | 3,470,059 |
| New Jersey.....    | 499,555   | 530,000   |
| Pennsylvania.....  | 2,311,786 | 2,542,960 |

Aggregate..... 8,826,851

9,506,208

This portion of the Union, therefore, has increased 11 per cent, or less by one-third than the aggregate per cent. of the whole country. If we take out the growth of the cities, it has hardly increased at all.

## 2. THE SOUTH-EASTERN STATES.

|                     | 1850.     | 1855.     |
|---------------------|-----------|-----------|
| Delaware.....       | 91,532    | 95,000    |
| Maryland.....       | 583,034   | 645,000   |
| Virginia.....       | 1,421,661 | 1,550,000 |
| North Carolina..... | 869,039   | 920,000   |
| South Carolina..... | 668,507   | 702,000   |
| Georgia.....        | 906,185   | 1,120,000 |
| Florida.....        | 87,445    | 110,725   |

Aggregate..... 4,617,403

5,142,725

This portion of the United States has increased at the rate of 11½ per cent., or but little different from the ratio of the North-Eastern States. In this region the States of Georgia and Florida are comparatively new, and in these the present increase is the largest.

## 3. THE NORTH-WESTERN STATES.

|                | 1850.     | 1855.     |
|----------------|-----------|-----------|
| Ohio.....      | 1,980,429 | 2,275,000 |
| Indiana.....   | 988,416   | 1,150,000 |
| Illinois.....  | 851,470   | 1,300,250 |
| Michigan.....  | 397,654   | 515,000   |
| Wisconsin..... | 305,391   | 552,109   |
| Iowa.....      | 192,214   | 345,985   |
| Minnesota..... | 6,077     | 40,000    |

Aggregate..... 4,811,551

6,208,334

This is an increase of 29 per cent., or one-half more than that of the aggregate of the whole country. In this region of country are more than *one-third* the whole number of miles of railroad in America. This is partly the effect of the great enterprise and fertility of that region; but they are also a cause of its prosperity, and will yet more powerfully influence its growth.

## 4. THE SOUTH-WESTERN STATES.

|                  | 1850.     | 1855.     |
|------------------|-----------|-----------|
| Kentucky.....    | 982,405   | 1,080,000 |
| Tennessee.....   | 1,002,717 | 1,102,000 |
| Alabama.....     | 771,623   | 832,266   |
| Mississippi..... | 606,326   | 720,000   |
| Louisiana.....   | 517,762   | 600,000   |
| Missouri.....    | 682,044   | 850,000   |
| Arkansas.....    | 209,897   | 247,112   |
| Texas.....       | 212,592   | 370,600   |

Aggregate..... 4,985,362

5,801,378

This is an increase of 17 per cent., or little less than the general ratio. This is the part of the Union where there are the fewest railroads, and we see that it is composed of new States, the ratio of growth is less than that of the whole country, and that in five years it has gone behind the North-West. In fact, it is the growth of the North-West which alone keeps up the general ratio of the growth in the country.

MEMPHIS & LITTLE ROCK R. R. Co.—At a meeting of the Stockholders of the Memphis and Little Rock Railroad Company, held at Hopefield, Ark., on the 15th inst., James M. Williamson, Daniel B. Turner, James Elder, H. L. Guion, of Memphis, and Geo. C. Watkins, of Little Rock, were elected Directors in said Company for the present year.

Our railroad friends will remember that we have unsurpassed facilities for doing all kinds of railroad printing.

COMMUNICATED.

## INTERCOURSE WITH THE MORMONS.

In the New York *Herald* of the 12th, is a letter from "Great Salt Lake City Nov. 30, 1855," with a new project of steam communication with the Western waters by way of the Yellowstone, Big Horn and Wind rivers, or some other of its tributaries, inviting attention to the *possibility* of approaching within 400 miles of Salt Lake City by steamboat. The government is asked to explore, &c. This is no doubt an excellent route, and will some day be settled upon, and be convenient for the people of Nebraska.

There is another route which has been talked of for some time by people in California, and which I have no doubt will be preferred by the Mormons: the route by the Gulf of California, Colorado to the mouth of the Virgin river,\* up the latter to Cedar City, Parovan, near the head waters of Ashley river, to Fillmore City, the Capital of Utah, thence across the tributaries of Nicolle river to Nephi City, Provo City, Lehi City, to Salt Lake City. By this route from the mouth of the Virgin to Fillmore City, the Capital of Utah, is about 320 miles, and 150 miles more to Salt Lake City, through a settled country. The greater part of this distance is now traveled by the mail from Salt Lake City to Los Angeles.

There are two steamers,—one side, the other stern wheel—now running regularly to Fort Yuma, at the mouth of the river Gila, and in 1853, the commanding officer of that post conducted an expedition up the Colorado 90 miles, accompanied the whole distance by a flat boat with supplies, showing its entire fitness for navigation. Lt. Whipple of the United States Topographical corps, in his exploration from Albuquerque on the Rio Grande, across the Colorado, to the Mohave and Los Angeles, crossed the Colorado in Feb. 1854 (season of low water), 30 miles below the mouth of the Virgin, where the river is separated by two islands, and found it wide, deep and rapid, three of the channels not being fordable. I have been assured by both trappers and Indians that there are no obstructions to navigation until you arrive at the Great Canyon above the mouth of the Virgin.

The Colorado below Fort Yuma is never so low as the Ohio below Louisville. There are no tributaries of any note south of the Virgin, and in that country the evaporation and waste are very great. Marcoux, a Frenchman with Lt. Whipple, estimated the valley of the Mohaves to contain arable land enough to support half a million of inhabitants.—This is composed of the valleys and river bottoms of the Colorado about the mouth of the Virgin, and must not be confounded with the valley of the Mohave river.

\* The distance by the Colorado from its mouth and to the mouth of the Virgin is less than 300 miles.



# RAILROAD RECORD—SUPPLEMENT.

The Mormons in the southern part of Utah are preparing to open this route, having already a settlement at the Vegas on a branch of the Virgin, 80 miles from the Colorado, and are about making another at its junction with the latter.

The advantages of the route via the Colorado are so obvious, nothing beyond the foregoing facts need be stated.

[Since the above was written, we learn from the *Alla Californian* of Feb. 20, that Governor Brigham Young in his message to the Mormon Legislature, read on Dec. 11th, advocates the opening of new channels of communication with the outer world from the east by way of the tributaries of the Missouri, and from the south by way of the Colorado. The latter route will probably be opened first, as it will be readily seen that the Mormons have been pushing their settlements south and can reach navigable waters in a much less distance and by a better road.]

NOTES AUXILIARY TO THE NUMBERS "ON THE PACIFIC RAILROAD," NEAR THE 32d PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT. BY THE AUTHOR.

NO. 1.

As the text must be correct, in order that the notes or comments upon it may be accurate and apposite, my first care must be to correct typographical errors, which, from unavoidable circumstances, have in some cases changed its meaning, and in others rendered it ungrammatical. No. 1 is republished in the *Railroad Record* of February 25th, and it is that to which I refer. It is in the Supplement of that date that the re-publication is made, and I now refer to it by page and paragraph, counting the paragraphs from the top.

Page 4, 6th paragraph, read, "on four drivers," for "four drawers." Same page, 2d paragraph, for 28,000, read "280,000 square miles." This is a case which shows the importance of a cypher, when placed to the right of numbers in themselves significant. It augments their value precisely ten-fold. This is taken from Capt. Humphreys' Report, now before me, page 81, 6th paragraph. Bonnycastle, whose work is dated July 15, 1818, makes Sonora equally as fertile and salubrious as Capt. Humphreys describes it. The distribution into States or Departments had not been settled at that time, in Mexico, and consequently Bonnycastle's area of Sonora is considerably less than that of Capt. Humphreys; and Bonnycastle, himself, remarks that "its limits are not accurately defined:" p. 78. There can be no doubt that Capt. Humphreys' area of that country is nearly correct, as I have had repeated occasions to know and say Capt. Humphreys' accuracy of information and scientific attainments are of the first order.

Bonnycastle makes the area of Sonora 159,600 (one hundred and fifty-nine thousand six hundred) square miles. His description of Sonora is as follows—one paragraph being omitted, relating to its trade:

"The soil of Sonora is good, on the shore of the gulf, and very fertile, but no very extensive forests are found in this province. The climate is good, the air being reckoned very pure; but in the immediate vicinity of the gulf, the air is indeed impregnated with marshy effluvia, and therefore not so conducive to health as in the interior.

"The gold and silver mines of Sonora are very numerous—the mines of gold being in the greatest proportion.

"This country is famed for an excellent breed of horses, for its fine cheeses, and for its cattle, which are superior and numerous. The animals of Sonora are chiefly the deer, the bear, the goat, and an extraordinary species of large lizard, which the natives domesticate, and teach to hunt mice and vermin.

"The capital is Arispe, situated near the head of the Huaqui river, 108° 58' 15" west longitude, and 30° 36' north latitude. This town is celebrated for its hospitality, and for the great quantity of gold used in the table services of the chief families, with a population of 7,600 souls.

"Sonora is the next town of any importance. Its population is 6,400.

"The principal rivers of Sonora are the Huaqui, or Yaqui, which rises in the Sierra Madre, and falls into the gulf of California, (after watering the district of Huaqui,) in 28° north latitude, and the Ascension river, which falls into the same gulf in 31°.

Page 4 of the "Supplement to the Railroad Record," 6th paragraph, is an error, which entirely reverses the true meaning; but the context has the true quotation, and to a reader of much reflection, it would readily occur. The error is in putting "no very great inclination" for "a very great inclination," which latter is marked as a quotation from Captain Pope's Report. In the same paragraph, for "page 3," read "page 39 of his report," (Captain Pope's,) and for "third" read "thirty-second parallel."

In the same paragraph, for "babsa" read "balsa;" "b," by error, has been put instead of "l."

Bonnycastle says, p. 241, speaking of the Pongo, (not Panzo, as printed p. 4 of Supplement,) "Balsas are always used in this strait, as the spring they have resists the shocks which they experience when dashed against the rocks; in such cases a canoe or boat would be broken to pieces."

The balsa is a kind of river and coasting craft, much used in South America, made of a wood peculiar to that country, which has an unequalled springiness.

In this paragraph, and immediately succeeding the words "at that rate," the brevity

of the statement relative to the law of the free descent of bodies is so great as, no doubt, to produce some degree of obscurity, or even misapprehension, in many readers. The word "distance" is much oftener applied to horizontal space than to space above us; or, in other words, "hight." The full statement of the rule would be as follows: The hights are to one another as the squares of the times; and, reciprocally, the times are in the subduplicate ratio of the hights, or as the square roots of the hight. To give an example, it is an ascertained law, in the free descent of bodies, that a body falls 16 feet in a second, 64 feet in two seconds, and in three seconds it falls 144 feet—for 16 feet make 1 second, whose square is of course 1; 64 feet 2 seconds, whose square is 4, and 4 multiplied by 16 is 64; 144 is the fall in 3 seconds, and the square of 3 is 9, and 16 multiplied by 9 is 144, proving the above rule.

Page 5th, 2d paragraph, "for the working of the road after it shall have been continued," read "for the working of the road after it shall have been constructed."

Those who visit, and those who reside in the great countries surrounding the railroad on the 32d parallel, will see as much as the greatest of English poets imagined Columbus to have seen in vision—countries as magnificent—wealth as immense.

"In spirit, perhaps, he also saw  
Rich Mexico, the seat of Montezuma,  
And Cusco, in Peru, the richer seat  
Of Atabalipa, and yet unspoiled  
Guiana, whose great city Geryon's sons  
Call El Dorado."

## THE MEXICAN BOUNDARY.

BY COL. A. B. GRAY.

[Concluded.]

There is a route which it may not be considered out of place to refer to at the present time, which the disputed district commands likewise. It offers, I think, more immediate facilities for an early completion, as a way of communication across the continent, than either of the others which I have referred to.

The road over it could be built in a short time, comparatively, and when finished, it would develop the resources of the adjoining country, and while furnishing an expeditious means of transport, would greatly aid in the construction of a road tending towards San Diego and San Francisco.

This line would leave the Rio Grande in the vicinity of the Mesilla valley, pass through the disputed territory, and continue westward to the gulf of California, where it is said good harbors exist, and safe anchorage for the largest vessels.

Thus the navigable waters of the Pacific are reached about five hundred miles from the Rio Grande, without encountering mountain ranges, swampy lands, or icy obstructions; and with short ridges easily overcome; detached mountains readily avoided; valleys and streams advantageously situated, with a uniform and healthy climate throughout the year, are among the advantages it offers.

The great canon of the Pinal Llano Mountains, on the Gila, is gotten rid of, and one-half the distance saved from the Rio Grande, which must be traversed on the shortest of the more northern lines, to the Pacific coast,



except that which follows along the Gila, and across to San Diego.

A railway from the Gulf to El Paso might be made immediately available, in furnishing the shortest land travel to our military posts and settlements in New Mexico.

By a judicious disposition of the stations along this line, only a few troops would be required to protect the great northern frontier of Sonora and Chihuahua, and enable us to carry out the 11th article of our late treaty with Mexico more effectually, and at the same time prevent any depredations which the Indians might be disposed to commit on the road.

Soon after, the settlement of the country would make the presence of the military unnecessary, either for the safety of the railway or the security of the frontier.

The strongholds of the Apaches, and their pathway to Mexico would be cut off.

A wagon road established from the Gulf of California would enable supplies to be transported along this line at one-half of the present cost. The saving of one-third or more distance, through a comparatively unsettled country, in transportation, is an important consideration in the construction of a railway, more especially when men and materials, to a great extent, must be brought from very remote points.

The navigation of the Gulf of California is said to be very good. The trade-winds from the northwest, encountering the highlands of the peninsula of Lower California, and forming a counter current under its lee, enable sailing vessels to proceed advantageously along that coast.

Returning, by keeping on the eastern side, or along the shore of Sonora, they could avail themselves of the prevailing winds, which regain their usual direction, after sweeping across the wide expanse of water. The trade of the Gulf, with its pearl fisheries and other resources, would be speedily developed.

From Fulton, the great bend of the Red river, or from Shreveport to El Paso, at most 800 miles, over a country represented by Captain Marcy and others as exceedingly favorable, a railway might be constructed.

The government having made provision for a railroad in the way of lands, to Fulton, on the Red river, there would then be a continuous line of communication from the navigable waters of the Pacific to the Mississippi, covering a length of only about 1,500 miles. This route might be so located as to permit work to be carried on at various points, and in a short period, comparatively, it might be finished.

It would then connect with the roads constructed and in the process of construction, from New York to Napoleon, and from the Chesapeake, from Charleston, from New Orleans, and from the coast of Texas.

From St. Louis to Preston, or to El Paso direct, a road might be advantageously built, thus joining the main trunk, and reaching the Pacific by a route which I am satisfied offers very great facilities for early and substantial advantages.

It would be alike beneficial to all sections of the Union.

Roads then would be constructed from San Diego and San Francisco by Warner's, or the more northern passes, which would bring the commercial emporium of the Atlantic within seven days of the great harbors of the Pacific, over a route having a genial climate, free the entire year from the drifting snows

of the north, and the malignant diseases of the tropics.

The Gulf of California is a most convenient point for the immediate trade of China, India, and the Pacific Islands, and the western coast of Mexico, for it is not out of the sailing courses.

The trade of the east, to a great extent, together with the India and China travel from Europe, which nations have been struggling for centuries to command, would thus become a part of our western trade.

The advantages of such a thoroughfare are obvious. Five years would hardly elapse before inestimable benefits would be realized; and, should war threaten our Pacific possessions, a few days would suffice to send from the Mississippi valley an army that would defy any force that the most formidable power could array against us.

The fine cotton region of the Gila, the rich copper, silver, and gold mines of New Mexico and Sonora would be at once developed, bringing a vast district of country into cultivation, which now presents a fruitless waste, owing to Indian depredations and the absence of means of communication and protection.

A railway, when completed along this line, would be a surer protection than a Chinese wall, and the settlements which would spring up along it, and the rapid communication it could furnish, would cause the Indians to confine themselves to their fastnesses, and force them to abandon their predatory habits.

Mexico has tried for a century past to insure safety to her inhabitants in this region, but notwithstanding the great expense she has incurred in keeping up her garrisons, she has failed to afford them protection.

The deserted appearance of the country from El Paso to the Colorado, is no criterion by which to judge of its value.

The beautiful valley of San Xavier, or Santa Cruz, some two years ago, when I passed through it, was entirely deserted.

The once thriving towns of Tumacacori and Tubac had not the sign of a living soul about them, except the recent moccasin track of the Apaches.

The orchards and vineyards of the once highly cultivated fields and gardens bore the marks of gradual decay and destruction.

The ranchos of Calabrazas, of San Bernardino, and numerous other places on this frontier, presented the same melancholy aspect, as the result of the inability of Mexico to protect this portion of territory from the inroads of the savages.

There are now but a few settlements throughout this district of country, but were it protected by a power that could and would defend it, what is now a waste in the hands of the savages, might become a thriving country, with safety insured to its inhabitants.

It is but necessary to glance at any map of the continent, constructed from the most correct data now before the public, to perceive that under any circumstances the valley of Mesilla must be of vast importance to the States, commanding, as I am satisfied it does, the great gateway to the Pacific.

The public, I think, has been misled from misrepresentations made in regard to the resources of the region of country lying along the Gila, and upon the line proposed for a railway at or near the parallel of 32° north latitude. That portion east of the Rio Grande I can say but little of from personal observation, having been over but a part of the ground near the eastern division in Texas,

and that in the vicinity of El Paso. At both these points a fine country exists. Upon the Gila river grows cotton of the most superior kind.

Its nature is not unlike that of the celebrated Sea Island cotton, possessing an equally fine texture, and, if anything, more of a silky fibre.

The samples I procured at the Indian villages, from the rudely cultivated fields of the Pimas and Maricopas, have been spoken of as an extraordinary quality.

Wheat, corn, and tobacco, together with beans, melons, &c., grow likewise upon the banks and in the valleys bordering the Gila and its tributaries.

The sugar cane, too, I believe, will be found to thrive in this section of the country, west of the San Pedro. A sort of candied preserve and molasses, expressed from the fruit of the cereus giganteus and agave Americana by the Indians was found by our party in 1851, as we passed through the Pinal Llano camps and among the the Gila tribes, to be most acceptable.

The candied preserve was a most excellent substitute for sugar. It is true that there are extensive wastes to be encountered west of the Rio Grande, but they are not deserts of sand, but plains covered at certain seasons of the year with luxuriant grass, exhibiting green spots and springs not very remote from each other at all times.

There is sufficient water in the Gila and its branches for all the purposes of irrigation when it is wanted, the streams being high during the season most needed.

The Rio Salado, a tributary of the Gila, is a bold and far more beautiful river than the Gila itself, and, from the old ruins now seen there, must have had formerly a large settlement upon its banks.

To many persons merely traveling or emigrating across the country, with but one object in view, and that the reaching their destination on the Pacific, the country would generally present a barren aspect. But it will be recollected that the most productive fields in California, before American enterprise introduced the plough, and a different mode of cultivation from that of the natives of the country, presented somewhat of a similar appearance.

Many believed, at first, from the cold and sterile look of the hills, and the parched appearance of the valleys, over which the starving coyote is often seen prowling in search of something to subsist on, that California could never become an agricultural district, but must depend upon her other resources for greatness, and trust to distant regions for the necessities of life required for her increased population.

It was natural enough, too, that this impression should be created in those accustomed to a different state of things, and particularly when it is considered that the very season of blossom and bloom of our Atlantic States was the winter of California; but these same fields and hills have a very different appearance in January, February and March, clothed as they are in the brightest verdure; and no one now will pretend to say that California does not possess within herself great agricultural, as well as mineral wealth. This, I believe, will some day become the same with the country stretching across from the Rio Grande to the Gulf of California, adjacent to the Gila.

Before closing this statement, I cannot but



express myself to the department as being under deep obligations to those of my assistants to whose care, diligence, and skill, in a great measure, I am indebted for the success of an expedition from the copper mines of New Mexico to San Diego on the Pacific coast. These officers, in connection with the faithful men who followed me, some of whom upon previous expeditions had been well tried, did their duty faithfully.

## Opinions of the Press.

From the New Orleans Delta.

### ON THE PACIFIC RAILROAD.

NEAR THE THIRTY-SECOND PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

NO. V.

In this number we propose to discuss the constitutional question with respect to the power of the General Government to build this road, and trace how far and in what manner it may be expedient for it to exercise that power in the present case. In one number more we will conclude the discussion for the present, by a recapitulation, and some personal considerations bearing on the question.

Before proceeding to the main question we will introduce a brief extract from Captain Pope's report (p. 65), which is evidence in addition to that already adduced of the nationality of this road. "From Cairo, at the mouth of the Ohio, where it connects with the great Central Road of Ohio, a railroad is now in process of location and construction through Little Rock to Fulton. At Little Rock it is met by a branch from Memphis. A road from Vicksburg, and the New Orleans and Shreveport Road, along Red River, unite at Fulton; and these various lines connect at the eastern termini with the great chains of railroad which traverse nearly all the States of the Union."

We deduce the constitutional right and the constitutional duty of the construction of this road by the Federal Government, from the following clauses in the Constitution of the United States, and from certain interpretations, in which there has been general acquiescence for sixty-four years.

#### ARTICLE I.

Section 8 has the following clause:

"The Congress shall have the power to raise and support armies;" "To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this Constitution in the Government of the United States, or in any department or officer thereof."

#### ARTICLE III.

Section 4:

"The United States shall guarantee to every State in the Union a republican form of government; and shall protect each of them against invasion."

Now, military roads have been constructed by the United States in virtue of these clauses. Probably not less than fifty military roads have been made by the General Government, in virtue of these clauses, since its organization. It matters not as to the constitutional power, whether the road be five, ten, one hundred, a thousand, or two thousand miles, provided it "be necessary and proper for carrying into execution the foregoing powers." The principle in both cases is the same, and the

obligation is the same, or stronger in the case of the longer road as in the case of the shorter; for the presumption necessarily is that there are more and greater interests to be protected in the case of the longer than the shorter road; that there are more individuals, citizens of the Union, whose right to protection is recognized expressly and by universal implication in the constitution in the one case than in the other. Protection is guaranteed in this clause of the fourth article against invasion; allegiance is implied as a consequence due for protection, but is not due unless protection is given. This was the doctrine of our revolutionary fathers; the doctrine which they repeated in multitudinous speeches and writings, and which they maintained amidst the cannon's roar and lightning's play of the battle field.

The powers "necessary and proper to carrying into execution" the power "to raise and support armies" do not specify the *modus operandi* by which Congress should proceed in effecting that object. To avoid tediousness and unnecessary detail, it is left to the common sense, wisdom and patriotism which are presupposed in the very formation of the Constitution. The equipment of an army is not designated, because it is necessarily implied; it is a power derived by fair inference from the power expressly given "to raise and support armies," and to "protect each of them (the States) from invasion." Nor are military roads named; an army must pass over these in proper time to reach the point of destination at which the enemy must be met, and they must be made in the manner most practicable for this end. All this is implied, and all this has been often practised in the face of the hair-splitting and absurd objections which have been urged upon the subject.

The objectors in these cases have usually been men not amongst the most reluctant "to declare war, and grant letters of marque and reprisal." They cry out against the danger of exercising those minor powers for which we are contending, whilst they are not slow to exercise the greater power, involving not only labor and expense, but the loss of life to any number of the citizens who may be called upon to engage in the war, and the destruction of any amount of property which may be necessary to accomplish the ends of the war, and taxation until the national debt shall swell mountains high, if it be deemed necessary by Congress to assess taxes to that extent for the maintenance of the national honor and the security of the national interest. Surely in the nature of their objections, on the ground of danger to the country and constitution—when it can easily be proved that there is more danger in their own *admitted* powers, than in those to which they object—they are utterly inconsistent; and though we charge them not with hypocrisy, we must say "they strain at a gnat and swallow a camel."

Nor is the kind of road which we propose objectionable—it is the best kind of road for the end intended. As we have said, allegiance and protection are reciprocal; when the latter is not given, the former is not due—we must protect California. "The United States guarantee to protect her from invasion;" but if the United States voluntarily forego the means of protecting her, how do the United States fulfil this solemn obligation of the Constitution? In that case California is no longer under allegiance to the United States,—will need all her own resources, and must retain all her own resources for her own defence.

Nor are these apprehensions ideal. The existing war in Europe may thus involve us. The *London Times*, soon after the capture of Sebastopol, proclaimed that the European powers must now see that France and England united were adequate to the execution of any purpose on which they might resolve; and we had it uttered by the British Foreign Secretary of State, that there was a Western question to settle after they had settled the Oriental question; in other words, there was a great Western power to cripple after they should succeed in settling the Eastern. We extract from the news of the day an article that significantly denotes the spirit of the British Government. It is as follows:

"What mean, (say the English journals,) the large addition just ordered to the British fleet on the American West India station. A large squadron of sixty gun ships have been ordered for Bermuda and the other American stations. A British fleet of unusual strength will soon be within striking distance of our coast."

We will state what it means. We have an unadjusted question with her about Nicaragua, and about her violation of our neutrality laws in enlisting men in our borders for her war in the East. But we are mistaken if we suppose that, should she become involved in war with us, she will make her chief attack on our Atlantic shores. She may commit predatory incursions there, and she may make a feint of attacking us there; but her grand attack will be made where she knows we are most vulnerable; where her gains can be the greatest—in California. She has taken Sebastopol, (in union with the French,) and Kinburn, and forced the Russians to blow up Ortzakoff; and soon she will have taken or effectually blockaded all the Russian naval force in the Black Sea, and may detach a part of her fleet thence to India, to come down upon the coast of California, with seven or eight thousand land forces, to attack San Francisco. France may add an equal number of men; and the combined two great naval kingdoms may proceed to settle the Western question even before they have finally adjusted the Eastern question. Monarchy, in Europe, is in one of its periodical fits of intense insanity, and our carelessness and remissness in not providing proper defence and means of defence, indicate that we are laboring ourselves under a species of lunacy. Let us not indulge in dreams of unmolested peace. Let us look at facts as they rise from the mouldering ruins of cities and towns captured and destroyed, and learn a warning lesson.

See on the desolate Crimea's side,  
An awful desert, rude and wide.  
The scene of that tremendous day,  
Where death and havoc marked their way!  
Ye future ages, cast your eyes,  
Behold yon blood-stained fragments rise,  
And let those relics tell.  
Where, whelm'd beneath their parent ground,  
The hopeless Slavons fighting round,  
In common ruin fell.  
There fair Sebastopol's buildings spread;  
There towered aloft her stately head,  
There valor fix'd a favorite throne,  
And wealth and commerce were her own.  
To meet the morning's golden beam,  
Obedient Euxine duly came  
And kiss'd the happy shore.  
Fleets from many regions fraught,  
Their choicest treasures hither brought,  
And piled the wealthy store.

But now, as if

"Etna had from its burning hold  
Sulphurous torrents hither roll'd,"

the mighty fortresses, which so long delayed

\*Sebast means the Empress, or imperial, in Greek, and polis is from polis, signifying city.



the enemy, have sunk under the fire of 1200 pieces of artillery, pouring forth, *scientifically*, destructive shot and shell—as effectual as if Ætna itself had heaped up ruin and fragments, and mangled bodies. Surely, we have occasion for thought in all this. And we predict that events immediately coming, will not tend to lessen the grounds for precautionary measures, but greatly increase them. The construction of this railroad, and of very strong fortifications in California, and San Francisco, and San Diego, will afford the best security against serious disasters. If we do not know the value of the harbor of San Diego, an enemy will teach it us in less than six months from the commencement of a war. Let Congress, then, without delay, incorporate a company to build the railroad near the 32d parallel of north latitude, commencing at Fulton, in Arkansas; or, if that be preferred, let it accept some company already incorporated, if there be any such that can make the necessary conditions and engagements without a breach of its charter; let Congress subscribe forty millions of dollars; let the work be carried on at the rate of 260 miles per year. In seven years it will be finished between San Diego, or whatever point is selected, and Fulton—and in less than two years more will be finished between San Francisco and Fulton. The whole stock required should be ninety millions; the remaining fifty millions, after a subscription by Congress of forty millions, should be subscribed by individuals and firms, and incorporated cities or towns; due provision to be made as regards the forfeiture of stock—the law, in this respect, keeping the medium of slackness and severity—so as, on the one hand, to discourage speculation in the stock, and to afford to men of small capital, means to enable them to subscribe with a considerable liberality, without extreme danger to their existing business transactions.

The man who shall do most to effect this great improvement, by combining and influencing public opinion to take hold of it, would unite in a very high degree, the honors of merit and popularity, not always found in exact coalition. He would realize a popularity such as that which Cicero described as attending his return from exile. On all the finished route of the railroad, as well as in far the larger part of the great valley of the Mississippi, he may, should he choose, have a reception such as the orator portrays when, by the revocation of his unjust banishment, he returned again to his beloved Italy:

"Now such was my return, that all the way from Brundisium to Rome, I beheld all Italy its attendant host; nor was there a region, a municipal town, a prefecture, or a colony, which did not send me a deputation to pay me their congratulation. Need I mention my approaches to public places; the crowds of people that came from the towns; the concourse of heads of families, with their wives and children, from the country? That one day was like an immortality—the day in which I returned to my country. When I saw the Senate and the whole Roman people come forth to meet me—when Rome herself seemed to spring forth from her foundations to embrace her preserver; for, in such a manner did she receive me, that not only men and women of all ranks, ages, conditions—of every fortune and of every place—but even the very walls, the dwellings and temples of the city seemed to put on a smile of joy!"

San Diego is in direct line from N.Y. to China.

#### THE PACIFIC RAILROAD.

We republish the following communication, addressed to Hon. W. A. LAKE, from the New York *Evening Mirror*, of Feb. 7.

In the communication I recently took the liberty of addressing to you, I said: "That the road will be of great pecuniary benefit to the whole country, as well as a successful private enterprise, I may hereafter show." I will now endeavor, not only to do so, but at the same time will show that a greater enterprise for investment was never offered to the public.

I will endeavor first to show the necessity of such a road to the country; then the benefit derivable from it, when completed; and, lastly, wherein and by what means it will pay a large profit to stockholders.

We are now liable to a war with Great Britain. We have no fleets sufficient to cope with hers. Our present routes to California are by the West Indies and the Gulf, to which she can command all the keys; consequently, our intercourse and trade with the Pacific would be entirely cut off. The value of that trade would build a road thence annually.

We have not been admonished sufficiently by the maxim, "in time of peace prepare for war," our harbor defences not being complete on the Atlantic. It is scarcely supposable that they are better on the Pacific. The munitions of war are manufactured in the Atlantic States, and could not be transported hence in case of war; and San Francisco and the Pacific ports would be at the mercy of an enemy. Thus would our commerce be cut off—a commerce worth, to and fro, \$150,000,000 annually. Last year, fifteen hundred and twenty (1520) vessels arrived at San Francisco, amounting to five hundred and eighteen thousand tons. This fact renders the road absolutely and immediately necessary, for it averts all this danger by retaining within our borders the inter-oceanic transit for commerce, gold, and munitions of war.

In time of peace the nation's interest in a railroad across the continent is scarcely less in magnitude. In 1853 the amount of merchandise that arrived in California was valued at near \$100,000,000, the largest portion of which goes by way of Cape Horn, in ships. At an average of one hundred and thirty-six days, this freight, by passing twice through the tropics, suffers depreciation, not covered by insurance, calculated equal to 7 per cent., besides loss of time, which is chargeable to interest.

Suppose the merchandise to be worth \$80,000,000 we can thus calculate the loss by the voyage, 7 per cent. depreciation on \$80,000,000..... \$5,600,000  
Additional insurance round the Horn..... 2,400,000  
Four months' interest, being difference on railroad time and a sea voyage, worth 2½ per cent..... 2,000,000

Loss by four months' sea voyage..... \$10,000,000

#### LOSS BY PASSENGERS.

Average time of 120,000 passengers, to and from—forty days. Value of time per day \$3—difference of time 25 days—being \$75 each..... 9,000,000  
Average cost of passage for 120,000 passengers, \$250—difference of price average \$100 12,000,000  
Isthmus transit of \$60,000,000 gold—average time forty days—difference of twenty-five days' interest..... 294,000  
Difference in government transports..... 2,000,000

Total savings..... \$33,294,000

Here we have a saving to the industry and commerce of the country of an amount per annum of about double what it will cost to build the four hundred and eighty miles of road through the government territory, and

the only portion on the thirty-second parallel route where her aid is needed.

The estimate of 120,000 passengers to and from, is based on the fact that in 1854 50,137 passengers arrived at San Francisco alone.

I have estimated the time from New York to San Francisco at fifteen days, and make it out thus:

|   |               |
|---|---------------|
| From New York to Cairo, either by the Pennsylvania Central and Ohio, or by the Erie Road..... | 1200 miles.   |
| From Cairo to Marshall, in Texas, via the Cairo and Fulton Road.....                          | 400 "         |
| Thence to El Paso.....  | 768 "         |
| Thence to Fort Yuma, junction of Gila and Colorado.....                                       | 578 "         |
| Thence to San Diego.....  | 200 "         |
|   | <hr/> 3,146 " |

3,146 miles, at 20 miles per hour..... 6 days 13 hours.  
Thence to San Francisco, by steamer..... 2 " 00 "  
Detentions..... 0 " 11 "

Total time from N. York to San Fran..... 9 " 00 "

The same result can be made via St. Louis. The estimate of twenty miles per hour is equal to sixteen hours per day, at a speed of thirty miles, which may be considered a fair estimate.

From Savannah, on the 32d parallel, on the Atlantic, the distance can be made in seven days, thus:

|                                 |               |
|---------------------------------|---------------|
| From Savannah to Vicksburg..... | 746 miles.    |
| Thence to Shreveport.....       | 200 "         |
| Thence to San Diego.....        | 1,600 "       |
|                                 | <hr/> 2,546 " |

At 20 miles per hour..... 5 days 7 hours.  
Thence to San Francisco, per steamer..... 2 " 0 "  
7 " 7 "

Or from New Orleans, we make it in six days, thus:

|   |               |
|---|---------------|
| From New Orleans to Marshall, via the New Orleans & Opelousas Road—partially built..... | 326 miles.    |
| Thence San Diego.....   | 1,644 "       |
|   | <hr/> 1,970 " |

At 20 miles per hour..... 3 days 21½ hours.  
Thence to San Francisco..... 2 " "  
5 " 21½ "

These roads are all either completed or under sufficient progress to insure their completion, except the 587 miles through the government territory, from El Paso to Fort Yuma. Here we have termini at New Orleans from San Francisco in six days, at Savannah in seven, and New York in nine days; or to St. Louis in six days, and to Cincinnati in seven and a half—which two latter points the reader can easily calculate from the others. This leaves a wide margin for freight trains to make the distance in fifteen days.

A survey subsequent to Mr. Gray's, has made a route from the junction of the Gila and Colorado River, to San Diego, in something under two hundred miles, his route being two hundred and sixty; I therefore call it but 1,600 miles from Shreveport to San Diego.

It is highly probable that ere the road is built to San Diego, San Francisco will have a branch running down to meet it. We will now give this route the benefit of a trial, without rails, through the government territory, and it would work thus: Instead of traveling over this 580 miles in 29 hours, it can be traveled by coaches at 5 miles per hour. The difference would be 3 days and 5 hours, which, added to the other estimates, the best time to New Orleans can be beaten some 13 days, and New York time some 18 or 20 days. These are the advantages accruing from the road, when completed, to the people and commerce of this country alone. The transit of passengers and freight from China, Australia,



and the East, to England, but aid to make up the estimate. I will now make to show what the road can do for itself, apart from its character as a public benefactor. And in estimating the Pacific Railroad to the 32d parallel, I include the Texas Western Road, beginning at the Red River, at the terminus of the Vicksburg and Shreveport Road, to El Paso—783 miles—and the road from Fort Yuma to San Diego, of which we have certain data to estimate from, leaving the 578 miles between the Rio Grande and Gila, for which we must anticipate. Mr Gray estimates the cost across at \$45,000,000. The Engineer of the U. S. Army, sent under the recent law by Mr. Secretary Davis, differs but little from it. I will therefore suppose the road to cost \$50,000,000—although a minor railroad journal recently asserted in its leader that none of the routes had been surveyed by practical railroad engineers, and the editor did not believe either route could be built under \$100,000 per mile, about 150 per cent. more than the most costly road in the country.

All enterprises, when successful, or supposed so to be, are subjected to such misrepresentations, growing out of the same spirit that prompts individuals, to-wit: to such gentlemen, for instance, as George Law—"That they are about to write, and publish some grand expose;" but this is a digression.

I estimate the road to cost.....\$50,000,000  
The annual interest on which is.....3,500,000

The Company or road will own, when completed, 8,017,920 acres of Texas lands, at \$5.....\$40,089,600  
From California for the road, then, say 2,500,000 acres, at 24.....6,250,000  
From United States, for 350 miles, say 30 sections per mile, 11,136,000 acres, at \$1 60.....16,704,000

\$63,043,600

It must be remembered this is the value of the lands with a railroad running through them, not as they exist now. Ten years can revolutionize their value and their character. But for fear of over-estimating, I will call the lands merely sufficient to pay off the cost of the road and interest; for if the cost is \$50,000,000, and stock has been issued to that amount, on which 5 and 10 per cent. is assessed, that would take from the debt as paid in cash from stock, \$3,750,000—leaving a debt of \$46,250,000.

When we remember that in 1854 50,000 passengers arrived at San Francisco alone, and look to the fact that this would make much the quickest route from Australia to England, and that the facility induces the travel, we may safely count upon 100,000 passengers annually, which is a little over 300 per day, especially when the cost of first class passengers by the Isthmus is, I believe, about \$400, and second class \$200; and by this route they can for first class go

From New York to Cairo for.....\$30 00  
Thence to Marshall, say.....10 00  
Thence to San Diego.....75 00  
Thence to San Francisco.....25 00

\$140 00

And second class in proportion—we therefore calculate the income of the road to be from

150 first class passengers.....\$75 \$11,250  
150 second " ".....40 6,000  
150 way " ".....20 3,000

\$20,250

Which for 312 working days makes.....\$6,378,000

Freight on 60,000,000 gold at 1 1/2 per cent....\$900,000  
Freight on 40,000,000 gold from Australia, at 1 1/2 per cent.....600,000  
Freight on 40,000 tons at 50 per cent.....20,000,000  
Freight on 40,000 tons way at 25 per cent....1,000,000

Carriage and mail \$600 per mile, 1600 miles.....\$960,000  
Government transportation.....600,000  
Expenses maintaining road.....\$12,388,000  
6,388,000  
Profit.....\$6,000,000

To be applied to paying interest and dividends on \$3,750,000, amount paid for stock—which is near 170 per cent. on the investment, or 12 per cent. on the face of the capital stock of \$50,000,000.

Of course these estimates are partly hazarded, but I cannot but think they will fall short of the reality. The Texas lands are among the finest in the world, and will produce a greater variety and more abundant crops than any others known, combining what is rare—a soil and climate adapted to both cotton and wheat.

#### LOWER CALIFORNIA—ITS RESOURCES.

The peninsula of California extends from Cape St. Lucas, in latitude 22° 22', to a line running one marine league south of San Diego, having a sea coast on one side and an inner gulf coast on the other, of about six hundred miles in length. It has been customary to speak of this peninsula as a worthless territory, containing no valuable resources, and of course not worth acquiring, and so in this belief we have turned our eyes away from the real advantages which would accrue to us from its possession.

Agriculturally speaking, Lower California cannot be considered a rich country. It is generally rugged and mountainous, with an iron-bound coast, and rocky hills which extend across the whole peninsula. In the northern portion, however, near the dividing line, there is considerable good agricultural land, and throughout the whole territory the barren hills and rugged mountains conceal between their bases rich and verdant valleys, teeming with the agricultural wealth of a tropical climate. In the immediate vicinity of San Jose and La Paz, are some productive and well cultivated ranchos, and both these towns contain many lovely gardens, where oranges, grapes, bananas, figs, limes, pomegranates, cocoa-nuts, dates, tamarinds, and most of the tropical fruits grow in rich profusion. The soil, although sandy and light, wherever it can be irrigated yields abundantly.

The mineral wealth of Lower California will be the most attractive feature to the enterprising. No attempt at any considerable degree of development of these resources has yet been made. That silver, copper, iron and gold abound is well known, but owing to the want of energy and enterprise peculiar to the Spanish American race, and particularly to that branch of it which has inhabited California, but little has been done toward working the mines. One or two silver mines in the vicinity of San Antonio, are now wrought, and from them some sixty thousand dollars is annually sent out of the country in the form of "plata pina." Other silver mines have been opened, and found rich, but abandoned for want of machinery. Some very rich veins of copper have been found on the gulf, but none of the copper mines are at present wrought. Placer gold has also been found in several portions of the territory, though not as yet, in any large quantity.—Very extensive salt mines have been found on the Islands of Carmen, and San Jose on the gulf, as well as at San Quentin, on the outer coast.

The Gulf of California has long been celebrated for its pearls. These are found in all

parts of the gulf; the principal fisheries, however, being in the vicinity of San Lorenzo, about twenty miles from La Paz, and around the Island of Espiritu Santo, and then farther up the gulf, near Loreto. Other fisheries exist also, near the head of the gulf—and all these, although worked without any scientific application of labor, yield large profits to those engaged in them. The waters of the gulf abound also in turtle, the true tortoise, muscles, aulones, and in some places oysters are found. An epicure may find a great variety in the waters of the gulf.

The climate of Lower California is unequalled in the world. Italy, about whose "sunny vales" and "balmy skies" so many travelers have gone into ecstasies, and about which so much has been written, was never overarched by a lovelier sky than that which bends above the peninsula of California. In the lower portion of the territory, inside the tropical line, the weather is warm, but on either coast a breeze from the sea, or from the gulf, cools and moistens the air. In the vicinity of La Paz, the thermometer ranges during the year from 70 to 90 degrees, and the dream of a perpetual summer is fully realized. As in Peru, in the southern portion of the peninsula rain seldom falls, and the lack of it is compensated by heavy night dews, which answer almost as good a purpose. There never was nor never could be a climate more healthful.

As we think there is not much doubt that Lower California will ere long be embraced within our territory, any information in regard to it must be of interest, and as no country has ever been more misrepresented, we shall from time to time refer to it again. In another article we will speak of the advantages which would accrue to the United States from the possession of Lower California, in a commercial point of view.—*Alla*.

#### NEW TELEGRAPHIC LINE TO EUROPE.

Our Canadian neighbors are about establishing a new line of ocean steamers from Quebec to Liverpool, to be run during the summer months. The province pays £24,000 a year to sustain this line. In connection with this enterprise it is proposed to establish a line of telegraphic communication between Quebec and Forteau bay, a point on the straits of Belleisle, 700 miles east of Quebec.

Of the distances on the proposed line, the *Toronto Leader* says: "It is distant from Liverpool only 1,878 miles—while from Liverpool to Halifax the distance is 2466 miles; so that by the Canadian route there would be effected a saving of 600 miles, to the point where the news from England could be telegraphed over the continent. It is manifest, therefore, that no other point presents the same advantage for the early transmission of news as that which Mr. Young wishes to connect with Quebec by telegraph. Forteau Bay is 122 miles nearer Liverpool than Cape Race, in New Foundland, and compared with New York—which is reached by the best Collins' boats in ten days—it shortens the distance between the two continents no less than 1,135 miles, or about four days' sailing—so that a first class boat can, with ease, make



the voyage from Liverpool to the Canadian Land's End—the telegraphic terminus proposed by Mr. Young—in six days."

#### DEMOINE NAVIGATION & E. R. COMPANY.

Our readers will remember an extended notice of the plans and prospects of this company published in the *Record* some months back. The following from the *Demoine Courier* of March 6, will show what has been done:

We take pleasure in announcing to the citizens of the Demoiné Valley, and all others interested in the speedy and permanent improvement of our beautiful river, that at a meeting of the President, Engineers, Land Commissioner and other officers of the D. N. & R. R. Co., held at the office of the Company from Saturday to Wednesday last inclusive, all the contracts for the construction of all the Dams and Locks below from St. Francisville to this place, were let or re-let, the work all to be completed to insure navigation by the opening of navigation the next or spring of 1857, and also the preliminary steps taken to contract the dams and locks at this place and the remainder of the entire work up to Ft. Des Moines in April next, the last contracts to be completed by the 1st of January, 1858. The character of the improvement below St. Francisville, we believe, was not determined upon at this meeting, only it was resolved, the present season, to improve the natural channel of the river, by removal of the obstructions and dredging.

There was present at this meeting, Hon. Wm. C. Johnson, President of the Company; Hon. W. J. McAlpine, Consulting Engineer; Hon. E. H. Tracy, Chief Engineer, and Prof. Perkins, who remains here in charge of this office as Land Commissioner. Messrs. Brown, Harris and Parks, who have been looking after the company's interests here the past year we are happy to be informed, will remain with us permanently.

We have found the officers of the Company present at this meeting, without exception, obligingly disposed to furnish us with all the information in relation to the plans and purposes of the Company that we have had time to ask for, and they assure us emphatically that the time for talking has passed, and that unmistakable evidence will speedily be furnished the most incredulous that this most magnificent enterprise, which for so many years has been dragging its slow length along, is now to be carried forward to a speedy completion.

We are very sure every citizen of the Valley of the Demoiné will join us in expressing the hope that the present company may succeed even better than they expect in this matter, and that at a still earlier day than they can now fix upon, we may rejoice together in the benefits which this work completed, will confer upon them and us.

#### SOUTHERN PACIFIC, OR, Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON,.....ASSOCIATE EDITORS.  
T. WRIGHTSON,.....

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 80 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.  
All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, MARCH 31, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, ..... MONDAY, MARCH 31.

### THE CLIMATOLOGY OF THE PACIFIC RAILROAD.

In the discussion of the various routes for a Pacific Railroad, the subject of *climate* has not been sufficiently regarded. It seems to be taken for granted, that if a certain number of miles can be overcome, and a certain number of millions expended, the whole thing will be accomplished! But after all, this is the least part of it. The expense of *running* the road; the *business* it is to have, and its *security* are all matters of the very highest importance, in considering a machine like a railroad. If we had the money of the United States Treasury and could make the road immediately, the question still remains, what is this machine *good for when made*? If it cannot be run without costing more than it comes to, it had best not be built. Now, in the question of *running a locomotive profitably*, climate has everything to do. It is saying what all railroad experience will justify, when we say that it will *cost double* as much to operate a railroad on the line of 49°, which it will cost to run one on the latitude of 30°;—nor is that all. The first cost of building it will be very greatly increased by the obstructions of cold and snow. We observe that in the reports of the officers engaged in exploring the different routes to the Pacific, great effort is made to show that the road would be practicable on the ridges and valleys of the Rocky Mountains. Practicable, we mean, to be operated in winter. This may be so; but the great danger, and one, in our opinion, insurmountable, is not in those places, but on the *great slope* from the Mississippi to the coast of the mountains. This slope is 800 miles across, and in the whole distance is swept over by high winds, intensifying the cold and drifting the snows. Take, for example, the proposed route from Council Bluffs up the Platte—much of it is on or above the latitude of 42°—Fort Larimie being north of 42°, and down the great plain of this valley, the winds rush with resistless force. On these slopes the snows fall and drift to a great depth. How can a locomotive be run through snow drifts on these unsettled plains, in such a winter as the one we have just passed through?

In fact, it remains an unsolved problem whether a railroad *can be operated at all, in the*

*four winter months*, on that exposed plain. It is an unsolved problem, but the weight of evidence is against the probability of such a performance. In the first week of march, the snow was drifted in such heavy piles on the southern shore of Lake Erie, that trains could not get along, and at that same time the trains on the Erie road were obstructed for nearly a week. Now if this is the case on the comparatively easy routes south of Lake Erie, what must it be on the great plain from the Mississippi to the Rocky Mountains! It is easy to see that during the past winter, a railroad on the Eastern slope of the Rocky Mountains would have been absolutely impassable.

But however this may be, let us turn to the practical operations of such a road.

In the month of January last, the Baltimore and Ohio Railroad had its receipts *reduced one half* in consequence of the cold! This is one of those facts which cannot be got over. If such things take place on the Baltimore and Ohio Railroad, at what expense must a road be run on the Rocky Mountains, in the latitude of 42°, and at the height of 7,000 feet? We need hardly ask; for if run at all, it must be at an expense at least double that of the most expensive roads in the country.

This objection to the northern and middle routes, derived from climate, does not apply to the Southern Texas Route, for there the climate is so mild and equable, that neither in construction nor operation is there any difficulty of this kind. The difference in climate is immense. At Council Bluffs, and from thence west, the thermometer fell during last winter, as low as 30° below zero: but in the latitude of 32°, only to 10° above. So the difference of climate in extreme cold weather is *forty degrees*.

The consequence of this great difference of climate will operate in many ways favorably to the Southern route.

1st. The Texas road will not cost more than half what the northern route will. This is so plain, that if a *bonus of fifty millions* of dollars were given to make the road on the Middle route, a company had better make the Texas road without a bonus. In fact the Texas company can better afford to make their road *without* the aid of Congress, than the other companies can afford to make it with a bonus.

2d. The *running* the road will be so much cheaper, that the Texas company can make a large profit when the others can make none.

3d. The advantage to passengers will be

equally great. In both summer and winter, the climate of northern Texas is pleasant and healthy. In one half the year at least, it will be far pleasanter to travel the Texas route.

In a future number we shall discuss this topic at more length, and in the meantime, we trust our readers will examine the reasons which make the Texas route the best.

### WEALTH OF OHIO—NUMBER AND EXPORT OF ANIMALS.

In the table of population and wealth of the United States in 1855, published in our last number, it was shown that Ohio had increased in wealth in a degree equal to, if not greater, than that of any State in the Union. This may, at first sight, be attributed, in some degree, to the new mode of assessment; but this is not so, as we shall now proceed to prove. We must first mention, however, one of the great and leading *causes* of this increase of wealth, as it is directly connected with the leading object of the *Record*. This cause is the *fact* that Ohio is now *traversed in every direction by railroads, leading to great markets*. 2,700 miles of railroad in Ohio, are connected at once with the great central market, (Cincinnati,) and with all the Atlantic markets, from Boston to New Orleans. For example, the products of Ohio hogs are exported to Wilmington, N. C., by its connection with Baltimore, and to Columbus, Ga., through Nashville, Tenn. Nay, we have this spring eaten fresh shad from Charleston, S. C., brought by way of Baltimore; and while the New York papers were announcing that shad time would come about the first of April, we were quietly eating the nicest fresh shad, from Charleston!

Now, the immediate effect of Ohio railroads has been to *double the value of every acre of land within ten miles of the road*. This is a well-ascertained fact. Nothing can be clearer than if the railroads of Ohio were all taken away, the land on their borders would not bring half their present value. In producing this effect the value of the stock or bonds of the company are of no moment. If the road be running so as to carry off the produce of the country, it is of no consequence whether the *stock* of the company be valuable or not. Hence it is that the community often gain immensely by a railroad, when the stockholders actually suffer. Time, however, will regulate this matter. The stock of many a railroad company now despised in the money market, will be regarded in a few years as the most valuable species of property. We have



examples of this in the *Reading*, and the *Little Miami* Companies.

Having premised this much of the leading cause of increased wealth in Ohio, we proceed to show the reality, by the increased value of animals. In this species of property the mode of assessment makes no difference. Animals are always assessed at nearly their true value. This being the case, we extract from the last Auditor's Report the number and value of animals in the years 1852 and 1855, by which the comparison may be seen :

|             | 1852.     | 1855.     | Increase.    |
|-------------|-----------|-----------|--------------|
| Horses..... | 402,695   | 624,746   | 55 per cent. |
| Mules.....  | 2,992     | 5,315     | 80 " "       |
| Cattle..... | 1,093,218 | 1,791,189 | 65 " "       |
| Hogs.....   | 2,498,792 | 2,195,769 | Decrease.    |
| Sheep.....  | 3,050,796 | 4,337,943 | 40 per cent. |

In this table there is an immense increase in the *aggregate number*; but a falling off in *hogs*. The reason of this is quite obvious. When *corn* (which feeds hogs) cannot be carried to market, hogs are almost the sole consumers. They must be raised to eat the corn, and driven to market on foot. But when corn can be carried to market, and has a *cash* value, many farmers will not be troubled with them, preferring to *sell their corn*. The great increase is in cattle and horses, which the railroads greatly enhance in value, by giving them an immediate cash market.

Let us now compare the moneyed value of these animals :

|               | 1852.        | 1855.        | Increase     |
|---------------|--------------|--------------|--------------|
| Horses.....   | \$16,863,796 | \$31,415,004 | 90 per cent. |
| Mules.....    | 125,925      | 303,125      | 140 " "      |
| Cattle.....   | 10,097,858   | 18,902,006   | 80 " "       |
| Hogs.....     | 5,624,790    | 3,531,562    | Decrease.    |
| Sheep.....    | 3,581,385    | 5,664,829    | 60 per cent. |
| Aggregate.... | \$31,293,754 | \$56,615,620 | 50 per cent. |

It appears, then, that the value of animal property in Ohio increased *fifty per cent.* in three years; an increase much beyond that of the population, or even of the general wealth of the State in that time. Now, we wish to mark, in connection with this, a parallel increase in railroads. Turning back to 1851, the year preceding the valuation of 1852, which was made on the 1st of June, 1852, we find that prior to the valuation of 1852 there was *no railroad communication between Ohio and the Atlantic markets*. Neither the *Lake Shore Railroad*, the *Ohio & Pennsylvania*, the *Ohio Central*, the *Pennsylvania Central*, nor the *Baltimore & Ohio* were completed. The instantaneous and powerful influence of completing those communications on the wealth and commerce of Ohio, can now be distinctly seen. The same influence extends, though in a less degree, through all the minor connecting roads. The value of the 2,700 miles of railroad in Ohio is to the State not less than *two hundred and fifty millions*; although the actual cost does not exceed one hundred millions. But we must pass on to a consideration of the exports of animal products from this State.

In the *Record*, Vol. 1, No. 6, we estimated (from the annual commercial reports) the ex-

ports of animal products from Ohio in 1852, to be as follows :

|                                 |             |
|---------------------------------|-------------|
| Beef and Cattle.....            | \$2,394,750 |
| Pork, Lard, and Hogs.....       | 7,994,290   |
| Butter, Cheese, and Tallow..... | 750,000     |
| Wool.....                       | 2,100,000   |

Animal Products.....\$13,239,040

On the same data, with more accurate statistics of the State, we give the following estimate for 1855, viz :

|                                     |             |
|-------------------------------------|-------------|
| Beef and Cattle.....                | \$4,370,000 |
| Pork, Hogs, Lard, and Lard Oil..... | 9,150,000   |
| Butter, Cheese, and Tallow.....     | 940,000     |
| Wool.....                           | 3,000,000   |
| Horses.....                         | 500,000     |

Aggregate Export.....\$17,960,000

This is about 30 per cent. of the assessed value of the animals. But it must be remembered that the export value of animals is not the bare value of stock animals, young, old good and bad; but is the value of *fat* animals and is therefore the export of corn, grass and labor. The export of a fat hog from Cincinnati, in the shape of pork and lard, is about *six fold* his *average* value as a stock hog; and hence we find the export value of hogs to be double the value of all the stock hogs. In the above estimate of exports, we have considered the number of animals exported to be about thus :

|                       |           |
|-----------------------|-----------|
| Cattle.....           | 125,000   |
| Horses.....           | 10,000    |
| Hogs.....             | 700,000   |
| Sheep (wool off)..... | 3,500,000 |

In examining the above facts we find that the railroads are rapidly producing a *change* in the agriculture of Ohio. The production of cattle, horse, mules, sheep, hay, garden crops and fruits, are all rapidly increasing; but the product of hogs and small grain is relatively diminishing. The reason of this will be seen at once, if we compare our agriculture and markets with those of England. *Hay, cattle and fruit* are everywhere the products of *high priced ground*. Its exception might be urged in the case of the *pampas* of Brazil, and other South American countries; but that is not a case in point. There land has *no value*, and cattle roam in a state of nature. In *cultivated* countries, however, as land increases in value, the *cattle, hay and fruit* pay more profit than any other products, and the moment there is a market for them, (which in Ohio has been produced by railroads,) these crops, in time, *raise the value of lands*. This is seen wherever fat cattle and hay are raised.

We close this article with the proposition that the railroads of Ohio have returned three-fold their entire cost to the people.

☞ A letter from Fort Laramie informs us that on the 5th of January the mercury in the thermometer was twenty degrees below zero, and on the 16th it was seventeen degrees below that point. Tremendous snows had fallen throughout the last half of December, and the snow on the mountains, this side of the valley, was five feet deep.

## SNOW ON THE NORTHERN RAILROADS.

The editor of the Binghamton *Daily Republican* states the incidents of a trip to Northern New York, and the condition of its railroads, as follows :

"After passing a very quiet night in Stanwix Hall, in Rome, we repaired in good season to the depot, where we found a powerful team of *four* engines attached to the train, preceded by a noble sized snow plow, occupied by some half dozen men, with shovels, &c., ready for a start. We were soon under way, most gallantly pushing through the piles of snow which had accumulated upon the track during the previous forty-eight hours, our plow indignantly tossing the drifts aside to the right and left, until we entered a bank so high that it could not be thrown aside, when she would toss it over her head, and compressing it on either hand, would open a passage for the following train. It was a noble sight, and a scene of great excitement to many. Some of our passengers amused themselves by going out and riding from one station to another in the plow, which was constructed in the form of a caboose, and would hold a dozen or more. At one time it seemed almost as if we were to be buried, for the snow was so high on either side of the cars as to make it quite dark—as if we were passing into a tunnel. However, thanks to Providence and the power of steam, we were not stalled. But such piles of snow! We never have seen their like before, and hope not to see such again. In Rome, Adams, and some parts of Watertown, we found the sidewalks beaten on a level with the tops of the fences, while in many instances the front yards of the houses were filled up to the same height, forming a complete barricade to the front door, and the prospect is fair for more to come. Such a winter as this has not been experienced in these parts for many years past.

The Rome and Watertown Railroad, as all other roads, especially North and South roads, has been completely blockaded for days together. The Sackett's Harbor Road has been under cover for six weeks or more, and we learned last evening that they did not intend to open it till spring, as they lost far less money to have it idle than to run it during this winter. We have not heard very recently from the Ogdensburg Railroad, but our last information, two weeks ago, was that it had been shut up for two weeks, with no prospect of its being open very soon. It has been a hard winter on railroads everywhere.

## PACIFIC RAILROAD—ACTION OF THE LEGISLATURE OF CALIFORNIA.

We find in the San Francisco *Chronicle* of Feb. 16, the following notice of the action of the Legislature of that State on the great question now occupying attention :

The subject of an inter-oceanic railroad is receiving from at least some members of our Legislature, the attention it merits. Mr. George, of this county, has presented a joint resolution, urging upon our Senators and Representatives in Congress, the necessity of using all their influence to effect the great work. They are asked to use their utmost endeavors to procure from Congress, without delay, the passage of a law providing for the construction of the Atlantic and Pacific Railroad, by donation of alternate sections or di-



visions of public lands, or by direct appropriation of money from the nation's treasury. The resolution professes to grant the right of way for the road through any portion of this State, to the General Government.

The argument for the road, and for the action proposed by the resolution, consists, according to the preamble, of the following

"Whereas"es: The isolated position of California and consequent liability to foreign aggression, through her unprotected ports; the rapidly augmenting commerce, foreign and domestic; the present and future prosperity and happiness, increasing wealth, and safety of the people of California; and the belief that the people of this State consider the building of the railroad "as essential to the integrity, perpetuity, and well being of the Union." And the joint resolution further takes the ground that the powers of Congress not only authorize but actually require the exercise of such power as may be necessary to aid in the construction of works of a national character, and tending to advance the good of the whole nation.

It proposes to authorize the Governor to appoint forthwith six Commissioners—two from the north, two from the south, and two from the west—and to report said appointees to the Senate for confirmation. And further, that said Commissioners proceed immediately to visit the Legislatures of the several States which may be in session, to request their co-operation and aid, and afterwards to proceed to Washington City and use their joint endeavors to effect the objects expressed by the resolution. Many more reasons might have been given in the resolution, but perhaps enough are glanced at.

How far the passage of the joint resolution might aid the great and desirable object, it is not possible to tell. But if the proper men were sent on this mission at once, they could undoubtedly effect much. It would bring the question home to the legislators, and through them to the people of each State. Now, with most of them, it is a distant question, a cold question, a costly question, and one in which they do not feel an immediate interest. It is only necessary to convince them that it is for their individual profit and advantage, to ensure their support. Six men, with but this one object and business, could place the question before the different Legislatures in a most effective manner.

#### SAN FRANCISCO AND SACRAMENTO R. R.

The Sacramento *Union* of Thursday publishes in full the report of the Chief Engineer, Theodore D. Judah, upon the preliminary survey, revenue and cost of construction of the San Francisco and Sacramento Railroad. After a description of the character of the country through which the road will pass, the report says:

The city of Sacramento is situated upon the Sacramento river, ninety miles from Benicia, and one hundred and twenty from San Francisco. An air-line from San Francisco to Sacramento passes through Martinez, or about one mile south of Benicia. From San Francisco to Benicia is thirty miles; from Benicia to Sacramento via your railroad line is fifty-eight miles; via the river and present line of travel it is ninety, or thirty-two miles longer. This is occasioned by the windings of the Sacramento river. The time consumed by the first class steamers in making the trip

from San Francisco to Sacramento is usually, when no interruption occurs, about eight and a half hours. Your railroad can be run in one and a half hours; allow two more to San Francisco, and the time is reduced to three and a half hours.

#### DESCRIPTION OF LINE—FIRST DIVISION.

The line commences in the village of Washington, opposite the city of Sacramento, at the intersection of ——— street and the river, and following the line of ——— street about 3,000 feet; thence curving southerly, with a radius of 11,460 feet, for 2,500 feet, the line enters the low or tule lands; continuing thence straight for 28,750 feet, or about five miles, it crosses the main tule, crossing the traveled road at the western edge of the tule, being about midway between Gale's Shanty and the Tule Houses; curving then gently to the south, with a radius of 11,460 feet for 2,000 feet in length, it runs straight to the Puta Creek at Davis', crossing the traveled road about one-half mile west of Riggs' House, passing about three-fourths of a mile south of G. F. Brown's house.

This Division extends from Sacramento river to the Puta Creek, is thirteen miles in length and embraces the heaviest portion of the graduation and piling on the road.

#### SECOND DIVISION.

Curving to the south with a radius of 11,460 feet for a distance of 5,650 feet, the line crosses Puta Creek with a *truss bridge* of 300 feet in length, and continues straight to the Montezuma Hills, or end of the second division, a distance of twenty miles, or thirty-three miles from the Sacramento river.

The line on this division passes over almost an unbroken plain, the line being uniformly straight, with grades of five and ten feet per mile. There is no *cutting*, the grade being so adapted to the surface as to give a general height of embankment of three or four feet. The only structures of any importance are two truss bridges—one at Puta Creek, of 300 feet in length, the other across Ulatis Creek, of about eighty feet in length. The soil is generally a light, sandy loam, easy to excavate and forming excellent embankment. The land in this division is exceedingly fertile, and many thousand acres of wild oats hay—worth at the present time forty-five dollars per ton in Sacramento—grows, and is left to perish because it will not pay for cutting and land carriage to market.

The line in this division is from one and a half to two miles easterly of the main traveled road.

#### THIRD DIVISION,

Extends from the Montezuma Hills to the village of Cordelia, a distance of twelve miles or forty-five miles from the Sacramento river.

#### FOURTH DIVISION,

Extends from the village of Cordelia to the city of Benicia, being thirteen miles in length or fifty-eight miles from the Sacramento river.

It will be seen from this outline of the proposed route, that the two termini of the road are to be Benicia and Washington, a distance apart, as the report informs us of 58-62 miles, of which there are forty miles, or eight per cent of straight line.

Eighty per cent. of the line being straight; fourteen per cent. curves of 11,460 feet, or over two miles radius—or ninety-four per cent. equal to a straight line. Of the remaining

six per cent., four per cent. has a radius of 5,730 feet, or over one mile, making ninety-eight per cent. which may be run at the highest rate of speed. With these grades and curves, and a well laid track, express trains can make the entire distance in any required time, not less than *one hour*.

#### ESTIMATES—COST OF CONSTRUCTION.

In estimating the cost of construction the engineer assumes as a basis of the cost of manual labor, three dollars a day, that teams of two horses, including driver, will cost seven dollars per day, and that an ordinary day's work for a man is to excavate and wheel eight cubic yards, a distance of fifty feet. This he considers to be the maximum. The first work a bridge across the Sacramento river, is estimated to cost five thousand dollars.

#### SUMMARY OF COST OF CONSTRUCTION.

|                                  |           |
|----------------------------------|-----------|
| Graduation.....                  | \$999,250 |
| Structures.....                  | 202,550   |
| Superstructure.....              | 873,161   |
| Equipment.....                   | 248,600   |
| Building.....                    | 151,500   |
| Right of Way.....                | 50,000    |
| Fencing.....                     | 61,000    |
| Graveling.....                   | 147,000   |
| Bridge.....                      | 65,000    |
| Engineering and incidentals..... | 140,000   |
| Contingencies.....               | 58,639    |

Total cost of Road.....\$3,000,000

Making the total cost of your road, fully built, equipped, graveled, and fenced, \$51,707 per mile.

The Engineer recommends that a contract be entered into with the Steam Navigation Company to carry the passengers and freight between Benicia and San Francisco.

#### ESTIMATE OF RECEIPTS AND PROFITS.

It is assumed that your road will carry two hundred through passengers per day, each way, or a total of four hundred through passengers per day.

Fifty way passengers per day, each way, or a total of one hundred per day are estimated.

Through freight is estimated at four hundred tons per day.

Way freight is estimated at one hundred tons per day.

This estimate of receipts is based upon the assumption that the fare through from San Francisco to Sacramento will be \$3, allowing \$3 for the railroad and \$1 for the boat.

|  |           |
|--|-----------|
| 146,000 through passengers, at \$2 00..... | \$292,000 |
| 36,500 way " " at 1 50.....                | 54,725    |
| 146,000 tons through freight, at 2 00..... | 292,000   |
| 36,500 tons way " " at 1 50.....           | 54,750    |
| U. S. Mails.....                           | 15,000    |
| Express business.....                      | 25,000    |

Total receipts.....\$233,450

Deduct interest at 10 per cent. on

\$100,000 bonds.....\$100,000

Deduct working expenses.....240,000

Leaves net profits.....\$393,450

Or say 20 per cent. per annum on \$2,000,000 of stock.

The entire cost of your road is estimated at \$3,000,000. The capital stock is \$2,500,000. It is proposed to issue 10 per cent. mortgage bonds, which will leave, as a reserve fund, 500,000 in the company's hands. This can be used for the purchase of boats, if thought necessary, or be held as a reserve contingent fund for other purposes.

Two daily passenger and two freight trains per day, each way, will be necessary to perform the business of the road.



The passenger boat leaving San Francisco at 7 A. M., meets at Benicia a morning train from Sacramento, (starting at the same time.) Exchanging passengers and baggage, they both return, reaching their respective destinations at half past 10 A. M.

Leaving again at half-past three, P. M., the boat meets the afternoon train from Sacramento, (leaving at the same time,) at Benicia and returning, reach the destination at 7 P. M. This gives passengers an opportunity to breakfast on board the boat, and reach either city by half-past ten, A. M., giving them nearly the whole of the business hours of the day to themselves. Returning they have an opportunity for dinner on the boat, and reach either city in time to attend to either business or pleasure in the evening.

A freight boat, with two barges might leave San Francisco at twelve, noon, arriving at Benicia at half-past 2, P. M.; return at 9, P. M., arriving at San Francisco at half-past 11, P. M. The freight upon the two loaded barges at Benicia could be transferred by daylight, and an evening train leave Benicia at 7 P. M., arriving at Sacramento at half-past 10 P. M. An accommodation train, taking back the empty freight cars, might leave Sacramento at 6, P. M., arriving at Benicia at 8 and three-quarters, and there take freight boat, arrive in San Francisco at half-past 11 P. M.

#### THE MINNESOTA CLIMATE.

The Minnesotians speak in high terms of their climate. The St. Anthony Falls *Express* says: "So harmless is the nocturnal air in the summer and autumnal months, that voyagers and explorers, each rolled in his blanket, with no other coverlet but the sky, enjoy, on the ground, the most refreshing sleep. Persons with nervous systems deranged and relaxed, emaciated by fever and ague in the states below, or from exposure to the heat and malaria of the tropics, no sooner tread our soil than they are cheered by signs of convalescence. They feel better, stronger, more hopeful. The charming scenery, too, of cascades, cataract, river, groves, lakes, meadows and prairie, with its undulations, through which they wander, adds to their animation. The winters are intensely cold, as shown by the Thermometer, whose average indications for the mornings of one hundred and twenty-five successive days, in 1852-3 was zero, Far.'"

Here is an item from the St. Anthony Falls *Express* enough to make one shiver. Wonder whether they like their hot punches out that way? "Thursday, Jan. 5, was the most severe day of the winter. Several persons exposed to the keen blast, froze their extremities—face, ears, fingers, and pedal extremities. Friday morning was cool and pleasant, the mercury standing at 6 o'clock, A. M., at 30° below zero, wind southerly, sky clear, atmosphere pure and bracing, a 'love of a morning,' as the ladies would say. On such a morning the Falls and rapids send heavenward great volumes of steam, as though heated by some tremendous subterranean furnace whose fires are fanned by huge Cyclops." A "love of a morning, and the thermometer 30° below zero!"

NOTES AUXILIARY TO THE NUMBERS "ON THE PACIFIC RAILROAD," NEAR THE 32d PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT. BY THE AUTHOR.

#### NO. II.

As said in the first number of these notes, the typographical errors first claim attention. Page 5th of the *Railroad Record*, of March 3d, correct the name of the officer of the topographical corps, which is there printed Parker. Leave out the "r" at the end of the name, and we then have his name correctly—Parke.

Lieut. Parke has since completed surveys on another line, forming part of the route from the Pimos villages to the Gila. As the Secretary of War has spoken in his Report, at this session of Congress, and as the results of Lieut. Parke's survey on this part of the aforesaid route constitute a great improvement on the portion of the route referred to by the Secretary, and quoted by me, p. 5th of the *Railroad Record*, beginning and ending as follows: "the great difficulty experienced, &c.," to the words "by Artesian wells," I subjoin from Capt. Humphreys' Report to the Secretary of War, (of which the copies ordered by Congress are not yet published,) the following sketch of the improved line:

"The topographical examinations between the Pimos villages, on the Gila, and Donna Anna, or El Paso, on the Rio Grande, have resulted in many important improvements upon the line of survey of last year. They have established the practicability of constructing a railroad between those points of the Gila river, to the mouth of the San Pedro, and up that stream to the vicinity of the line of 1854—a route possessing great advantages over all other routes in this region. From the Pimos villages to the point of departure from the San Pedro, a distance of 166 miles, it passes along the cultivable valleys of those streams, instead of over bare jornadas; the ridge of mountains East of the San Pedro is crossed by a more direct route than that of the old line, and the Puerto del Dado of the Chiracahui mountains is avoided—that range being turned on the North by a gap, or break, lying between it and Mount Graham. The length and the cost of construction of this route will be about the same as that examined last year by Lieut. Parke; the summits to be overcome will be fewer in number, the elevation less, the grades more gentle, and the supply of water greater; and these, with the great advantages first mentioned, constitute this the best route yet made known in that region. The results of the examinations with respect to the supplies of water, make it probable—from the form and geological structure of the barrens and plains—that ordinary wells, at distances not exceeding 20 miles, would furnish abundant supplies. They also indicate the feasibility of Artesian wells, in

certain localities, which might be resorted to, if needed."

In the 6th paragraph, 2d column, p. 5th, of the *Railroad Record* aforesaid, before the words San Diego insert "to."

On page 6th, 1st column, 1st paragraph, for Messa read "Mesee." Same column, same paragraph, for Canizo read "Carizo."

GENERAL OBSERVATIONS ON THE TOPOGRAPHICAL AND AGRICULTURAL CHARACTERISTICS OF THE COUNTRY IMMEDIATELY UPON AND NEAR THE ROUTE OF THE 32d PARALLEL, FROM EL PASO TO THE MOUTH OF THE GILA.

The Gadsden purchases incorporates into our own territory the whole of the valleys of the Santa Cruz and San Pedro rivers, as well as the grazing country between.

Mr. Bartlett was the Commissioner appointed under Gen. Taylor's Administration, to run the boundary line, and he made many explorations beyond it, and within the limits of the country since acquired, and commonly called the Gadsden purchase.

"On leaving San Pedro," says Mr. Bartlett, "the whole face of the country changed.—From that river we had ascended to a plateau of an undulating character, similar to the western prairies. It was covered with short grass; and in the depressions we found pools of water, more luxuriant grass, and groves of small oaks.

"The country continued the same the following day, (Sept. 2, 1851,) the grass rich and abundant, the valleys studded with oaks, etc. Here a small stream, one of the tributaries of the Santa Cruz, was met with, which now became rapid and closely hemmed in by willows.

"The valley for the last ten miles of our march resembled an old and highly cultivated place, from which the people and their habitations had suddenly disappeared. Large cotton-wood trees and willow bushes lined the stream, while here and there, in little groves, were beautiful oaks and large mesquit trees; for the latter, although adapted to every soil, becomes a large tree in a rich soil like this. It seemed that each grove, as we approached it, must conceal some dwelling place and cultivated grounds; but in reality all was solitude, and there was no evidence that a furrow had ever turned the virgin soil, or a seed been sown there."

The valley of the Babocomori, a small stream which empties into the San Pedro, is another place of interest. Here was a ruined hacienda, which had been one of the largest cattle establishments in the State of Sonora. This valley was from a "quarter to half a mile in width, and covered with a luxuriant growth of grass." "The cattle roamed along the entire length of the valley, and at the time it was abandoned there were not less than forty thousand head of them, besides a large number of mules and horses."

A district of picturesque beauty, and evidently of highly productive soil, is that which leads to Santa Cruz, and which Mr. Bartlett describes as follows:

"September 23.—Resumed our march



through a wood quite difficult for the wagons. A few miles brought us to the *puerta*, or gate in the mountain; passing which, we emerged into a very broad and open plain of remarkable beauty. From the elevation where we first saw this valley, the prospect was exceedingly picturesque. Around us grew the maguey, the yucca, and various kinds of cacti, together with small oaks; while beneath us the valley spread out from 6 to 8 miles in width, and some twelve or fifteen in length. Unlike the desolate and barren plains between the mountain ridges, which we had crossed between the Rio Grande and the San Pedro, this valley was covered with the most luxuriant herbage, and thickly studded with live oak; not like a forest, but rather resembling a cultivated park. (Vol. 1, p. 401.)

Of the valley of the town of Santa Cruz, (which town, however, has only about 300 inhabitants.) Mr. Bartlett gives the following account:

"It possesses a fine valley, and bottom land of the richest soil, and is irrigated by a small stream, bearing its own name, which has its rise in springs, about ten miles to the North, in the beautiful valley through which we entered the place. It is admirably adapted to the raising of cattle and horses, as well as for all kinds of grain. Wheat, in particular, does remarkably well here. (Vol. 1, p. 408.)

Tucson, which is now within our limits, by the Gadsden purchase, with its adjacent valley and productions, is thus described by Mr. Bartlett:

"Tucson is the most northerly town in Mexico, and a very old place. It is found on the oldest maps, and is referred to by the early missionaries. It has always been, and is to this day a garrison. In its best days it boasted a population of 2,000 souls, now diminished to about one-third that number.—The lands near Tucson are very rich, and were once extensively cultivated; but the encroachments of the Apaches compelled the people to abandon their ranchos, and seek safety within the town. More than once the town has been invested by from one to two thousand Indians, and attempts made to take it without success.

"Wheat, maize, peas, beans and lentils are raised at Tucson in perfection; while among the fruits may be named apples, pears, peaches and grapes. The only vegetables we saw were onions and pumpkins; but in such a fertile valley all kinds will do well.

"The bottom lands are here about a mile in width. Through them run irrigating canals, in every direction, the lines of which are marked by rows of cottonwoods and willows, presenting an agreeable landscape."

The following is of importance in both an agricultural point of view, and with respect to a source of supply for materials to construct the railroad:

"The character of the whole valley watered by the Santa Cruz river is the same as described near the towns of Tucson and Santa Cruz. The fertile bottom land varies from one-quarter to a mile in width, which by irrigation is rendered exceedingly productive; but the miserable population, from want of energy, and from fear of the Indians, cultivate but a small portion. Mr. Bartlett states (p. 574, vol. 2,) that in the valley of which we are now speaking, 'between Tubac and Santa Cruz, are very considerable forests of

mezquit, the best materials for rail-ties that can be found.' These forests extend for twenty or thirty miles in length, and from three to five in width. The trees, too, are of a very large growth."

He who would emigrate to these regions must not go alone. It is only in companies of forty to fifty that they could be successfully settled by Americans. Their beauty and fertility attract the hostility of that robber tribe, the Apache Indians; therefore, Americans attempting to settle there, should go armed to the teeth.

#### THE PACIFIC RAILROAD AND THE REPORT OF THE SECRETARY OF WAR.

The reports of the officers employed, under the appropriations made for explorations and surveys, to ascertain the most practical and economical route for a railroad from the Mississippi river to the Pacific Ocean, were submitted to Congress on the 27th of February last, with a report from this department, giving a general sketch of the country over which they extended, a recapitulation of the results, and a comparison of their distinguished characteristics, from which it was concluded that, of the routes examined, the most practicable and economical was that of the thirty-second parallel. \* \* \* \* \*

When the report was made in February last, many of the maps, drawings and scientific papers, intended to form part of the report, and which could only be prepared after an elaborate examination of the materials collected, had not been completed for want of time, and it became necessary to substitute hastily prepared drawings and preliminary reports. This was particularly the case with regard to the work on the route of the thirty-fifth parallel. A minute examination of the materials collected in that survey has resulted in showing the route more practicable than it was at first represented to be, and in reducing to nearly one-half the original estimates of the officer in charge of the survey, which, indeed, seemed, when they were submitted, to be extravagant, and were noted in the report from this department as probably excessive.

Another feature of interest developed in the course of the further examination of the work on the route of the thirty-second parallel is, that the Colorado Desert, which is traversed by this route for a distance of one hundred and thirty-three miles, and which, in the report referred to, was noted as consisting of a soil that needed only water to render it highly productive, is, in fact, the delta of the Colorado River, and according to barometric levels, is so much lower than that stream as to be easily irrigated from it. Thus there is every reason to believe four thousand five hundred square miles of soil of great fertility, of which nearly one-half is in our territory, may be brought into cultivation in one unbroken track along the route.

Under the appropriation made at the last session for the continuation of these surveys and other purposes, three parties have been in the field during the past season.

One of these was directed to make examinations connected with the routes of the thirty-second and thirty-fifth parallels. This survey has greatly improved the aspect of the former route by changing the line for nearly half the distance between the Rio Grande and the Pimas villages, on the Gila River, from barren ground to cultivable valleys, and

entirely avoiding a *jarnada* of eighty miles, which occurs in that section; also, by the discovery of an eminently practicable route through cultivable country from the plains of Los Angeles along the coast, and through the Silinas valley to San Francisco. The connection originally proposed between these points was by way of the valley of San Joaquin and the Great Basin.

The attention of this party was also directed to an examination into the practicability of procuring water along certain parts of the route where it is now deficient. The report shows that it may be obtained by common wells at distances of about twenty miles.

From the result of this exploration, moreover, it appears practicable to obtain, at a small expense, a good wagon road, supplied with water by common wells from the Rio Grande down the San Pedro and Gila, and across the Colorado Desert. Such a road would be of great advantage in military operations, would facilitate the transportation of the mail across that country, and relieve emigrants pursuing that route from much of the difficulty and suffering which they now encounter.

A second party was charged with the duty of testing the practicability of procuring water by Artesian wells on the Llano Estacado, an arid plain, which has been heretofore described as a desert. The experiment has so far demonstrated its practicability as to leave little doubt of its final success; it will be continued, however, until the problem shall have been fully solved.

The examinations into the feasibility of causing subterranean streams to flow upon the surface from Artesian wells, though undertaken in connection with the practicability of a railroad, if they should prove entirely successful, will have a value beyond their connection with that object, in the reclamation of a region which is now a waste, and its adaptation to the pastoral and perhaps the agricultural uses of man.

The third party was directed to conduct an exploration from the Sacramento to the Columbia River, with a view to ascertain the practicability of a route to connect the valleys of those rivers. The officer in charge has reported the successful completion of the duty, but has not given details. The same officer has been directed to make a reconnaissance of the Sierra Nevada in the vicinity of the head branches of the Carson River.

The prosecution of instrumental surveys, accompanied by investigations into many branches of physical science simultaneously, over lines of such length, and embracing such an extent of latitude, is a work of greater magnitude than any of the kind hitherto undertaken by any nation, and its results have not only proved commensurate with the amount of work done, but possess a value peculiar to the scale on which it has been conducted, as affording a basis for the determination of some questions of science which no number of smaller and detached explorations could have furnished. Should means be granted, pursuant to the estimate in the report referred to, for continuing these explorations, I have every confidence that the expenditure will be well repaid by these contributions to our knowledge of the interior of the country.

The facts developed by these surveys, added to other information which we possess, suggest some considerations of great interest with regard to our territory on the Pacific. They exhibit it as a narrow slope of an average width of less than one hundred and fifty miles of



cultivable land, skirting the ocean for a distance of one thousand miles; rich in those mineral productions which are tempting even beyond their value, and which would be most readily turned to the use of an invader; drained by two rivers of wide spread branches, and with seaports lying so directly upon the ocean that a hostile fleet could commence an attack upon any one of them within a few hours after being descried from land, or if fortified against attack, so few in number that comparatively few ships would suffice to blockade them.

This territory is not more remote from the principal European States than from those parts of our own country whence it would derive its military supplies, and some of those States have colonies and possessions on the Pacific, which would greatly facilitate their operations against it. With these advantages and those which the attacking force always has of choice, of time, and place, an enemy possessing a considerable military marine could, with comparatively little cost to himself, subject us to enormous expenses in giving to our Pacific frontier that protection which it is the duty of the General Government to afford.

In the first years of a war with any great maritime power the communication by sea could not be relied upon for the transportation of supplies from the Atlantic to the Pacific States. Our naval peace establishment would not furnish adequate convoys for the number of store ships which it would be necessary to employ, and storeships alone, laden with supplies, could not undertake a voyage of twenty thousand miles, passing numerous neutral ports where an enemy's armed vessels, even of the smallest size, might lie in wait to intercept them.

The only line of communication then would be overland, and by this it would be impracticable, with any means heretofore used, to furnish the amount of supplies required for the defense of the Pacific frontier. At the present prices over the best part of this route the expense of land transportation alone for the annual supplies of provisions, clothing, camp equipage, and ammunition for such an army as it would be necessary to maintain there, would exceed \$20,000,000; the land transportation of each field twelve-pounder, with a due supply of ammunition for one year would cost \$2,500; of each twenty-four pounder and ammunition, \$9,000; and of a sea-coast gun and ammunition, \$12,000. The transportation of ammunition for a year for one thousand sea-coast guns would cost \$10,000,000. But the expense of transportation would be vastly increased by a war; and at the rates that were paid on the northern frontier during the last war with Great Britain, the above estimates would be trebled. The time required for the overland journey would be from four to six months. In point of fact, however, supplies for such an army could not be transported across the continent. On the arid and barren belts to be crossed, the limited quantities of water and grass would soon be exhausted by the numerous draught animals required for heavy trains, and over such distances forage could not be carried for their subsistence.

On the other hand, the enemy would send out his supplies at from one-seventh to one-twentieth the above rates, and in less time, perhaps in one-fourth the time, if he should obtain command of the isthmus routes.

Any reliance, therefore, upon furnishing that part of our frontier with means of defense

from the Atlantic and interior states after the commencement of hostilities would be vain; and the next resource would be to accumulate there such amount of stores and supplies as would suffice during the continuance of the contest, or until we could obtain command of the sea. Assigning but a moderate limit to this period, the expense would yet be enormous. The fortifications, depots and storehouses would necessarily be on the largest scale, and the cost of placing supplies there for five years would amount to nearly \$100,000,000. In many respects the cost during peace would be equivalent to that during war. The perishable character of many articles would render it perhaps impracticable to put provisions in depot for such a length of time, and in many cases there would be deterioration amounting to some millions of dollars per year.

These considerations and others of a strictly military character, cause the department to examine with interest all projects promising the accomplishment of a railroad communication between the navigable waters of the Mississippi and those of the Pacific Ocean. As military operations depend in a greater degree upon rapidity and certainty of movement than upon any other circumstance, the introduction of railroad transportation has greatly improved the means of defending our Atlantic and inland frontiers; and, to give us a sense of security from attack upon the most exposed portion of our territory, it is requisite that the facility of railroad transportation should be extended to the Pacific coast. Were such a road completed, our Pacific coast, instead of being further removed in time, and less accessible to us than to an enemy, would be brought within a few days of easy communication, and the cost of supplying an army there, instead of being many times greater to us than to him, would be about equal. We would be relieved of the necessity of accumulating large supplies on that coast, to waste, perhaps, through long years of peace, and we could feel entire confidence that, let war come when and with whom it may, before a hostile expedition could reach that exposed frontier an ample force could be placed there to repel any attempt at invasion.

From the results of the surveys authorized by Congress we derive at least the assurance that the work is practicable, and may dismiss the apprehensions which, previously, we could not but entertain as to the possibility of defending our Pacific territory through a long war with a powerful maritime enemy.

The judgment which may be formed as to the prospect of its completion must control our future plans for the military defense of that frontier, and any plan for the purpose which should leave that consideration out of view would be as imperfect as if it should disregard all those other resources with which commerce and art aid the operations of armies.

Whether we shall depend upon private capital and enterprise alone for the early establishment of railroad communication, or shall promote its construction by such aid as the General Government may constitutionally give; whether we shall rely on the continuance of peace until the increase of the population and resources of the Pacific States shall render them independent of aid from those of the Atlantic slope and Mississippi valley; or whether we shall adopt the extensive system of defense above referred to, are questions of public policy which belongs to Congress to decide.

Beyond the direct employment of such a road for military purposes, it has other relations to all the great interests of our confederacy, political, commercial and social, the prosperity of which essentially contributes to the common defense. Of these it is not my purpose to treat further than to point to the additional resources which it would develop, and the increase of population which must attend upon giving such facility of communication to a country so tempting to enterprise, much of which having most valuable products, is beyond reach of market.

## Opinions of the Press.

[From the N. O. Delta, Dec. 3.]

### ON THE PACIFIC RAILROAD

NEAR THE THIRTY-SECOND PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT.

NO. VI.

In this concluding number, we shall make a recapitulation, and add some general considerations. It will be somewhat more brief than any of the other numbers.

The authority on which we rest in coming to our conclusions, is entirely satisfactory. The surveys, estimates, &c., are made by gentlemen whose ability and integrity are unquestionable. The report of the Secretary of War is masterly; and the examination by Capt. A. H. Humphreys, of the Topographical Corps, assisted by Lieut. G. K. Warren, cannot be surpassed within the same compass, and is sufficiently enlarged to exhibit every important point with clearness. No worse results are possible on any part of the route than those gentlemen have contemplated and anticipated. But some improvement of this line may be expected from Lieut. Parke's survey (last made) of certain parts of New Mexico, near the Gila. The *Western Texan*, of a late date, published at San Antonio, mentions the arrival there of Lieut. Parke and his party, and that he had found and examined a route on the San Pedro, a tributary of the Gila, which affords a route greatly preferable to the long stretch between the San Pedro and the Gila, before surveyed, which, however, is practicable. Capt. Humphreys' estimates, with equipments, is, from Fulton, on Red River, to the Pecos, 624 miles, at an average of \$35,000 to the miles, \$21,840,000

|  |              |
|--|--------------|
| From the Pecos to the Rio Grande, 80 miles, at \$75,000 per mile.....  | 6,000,000    |
| Remaining 63 miles, at \$45,000 per mile.....  | 2,735,000    |
| 831 miles to San Pedro, on the Pacific, at \$45,000 per mile.....  | 37,395,000   |
|  | \$68,970,000 |
| From San Fernando to San Francisco, 421 miles, 346 miles at \$50,000, and 75 miles of mountain passes, at \$90,000 per mile..... | 24,150,000   |
|  | \$93,120,000 |

To San Diego will not cost more than a million and a half more than to San Pedro—and probably, by a nearer route, not yet surveyed, not even a dollar more.

On all this route the latitude and elevation combined render the country most salubrious for 1250 miles of the 1618, and the entire 421 miles is healthy. The other portions of the 1618 miles are also healthy, but require, from the great heat of the climate, care in the performance of labor, and moderation in exercise.

We have proved that from the first opening



of the road in its whole length, it will afford as the *minimum* per year, 6 per centum; that, at the lowest calculation, it will gradually *increase* at a *compound* interest of over 4 per cent. for thirty years—reaching the enormous *clear* interest of 18 per cent. by that time.

We have proved that by the time it gets two-thirds of the distance (449 miles) from Fulton to the Llano Estacado—that is three hundred miles of that distance—it will bring to New Orleans upwards of four millions of dollars worth of cotton per annum, whilst it will augment the value, within five years of its commencement, of twenty-two millions five hundred thousand acres, to the extent of two dollars per acre, average—or forty-five millions of dollars.

We have also shown that the constitution renders it imperative on us to protect our Pacific possessions, and that there is no practicable mode of discharging this duty, but by the construction of this as a military road.

We have shown the probability of a great trade in flour with Asia and Australia by this road, but have not made *such* a trade any part of our estimates of profits. For the trade in flour for which we have estimated is comparatively quite inconsiderable.

The feasibility of the route has been proved in every point of view. Coal is abundant immediately upon it, and the great Arkansas coal field is distant about 150 to 200 miles, over a country level and rich, presenting great inducements for the construction of a railroad in other points of view, as well as for the transportation of coal.

The difficulties about water vanish upon adverting to the data obtained by the surveys. For working parties—even should the attempt to procure water by artesian wells fail—water can be had, good and abundant, by sinking wells and constructing reservoirs. The undulating character of the country is eminently well adapted to the formation of the latter where needed. For the working of the road after it is constructed, the supplies are ample. Take for example the space probably the most difficult of the whole in this respect, viz: from the Pecos to the Colorado of Texas, 169 miles. The Pecos affords to the locomotives coming from the west an exhaustless supply of water. It moves (says Mr. Byrne, Assistant Comptroller,) at the rate of two and half miles per hour—that is, at the rate of 13 200 feet per hour—and Captain Pope certainly conveys an idea of its rapidity not less swift. On page 39 of his report he says: "Its bed (that of the Pecos) has a very great inclination, which for thirty miles at least above the 32d parallel, and fifteen below it, occasions continuous rapids, and in many places falls off two or three feet." Again, same page, he says: "About fifteen miles below the 32d parallel the river begins to change its character, passing from its rocky bed and a depth of only two feet over the rapids, to a soft, muddy bottom and falling banks, and a depth probably at no place less than four or five feet, and in many places fifteen or twenty feet." On page 13 he says: "The river itself is about forty yards wide."

Now, taking Mr. Byrne's statement—and Capt. Pope's certainly does not give less velocity—the displacement of water in the river is per minute 220 feet, and this divided by 60, the number of seconds in a minute, is 3 feet and two-thirds of a foot per second. Let us throw away the fraction, although in this particular case a large one, and say that the displacement is 3 feet per second. Capt. Pope

says the river is 120 feet wide; this multiplied by 2, the depth, gives 240 feet, and multiplied by three, the rate of movement per second, gives 720 cubic feet as the displacement per second, which, multiplied by 1728, the number of cubic inches in a cubic foot, gives 1,244,160, (one million, two hundred and forty-four thousand and one hundred and sixty) inches, and these divided by 272, the number (with a very small fraction thrown off) of cubic inches in gallons, gives as the displacement or discharge of water, per second, 4,574 gallons, which makes 274,440 per minute, and 16,466,400 (sixteen millions four hundred and sixty-six thousand four hundred) gallons per hour, and 395,183,600 (three hundred and ninety-five millions one hundred and eighty-three thousand six hundred) gallons per day. Surely a river which, at the driest season of the year, discharges this amount of water per minute, hour and day, will, with proper arrangements, supply all the locomotive water needed over 169 miles. Going west the Colorado river will furnish a supply to the middle of the Llano Estacado, and far beyond all necessary supply; and the Sulphur Springs of the Colorado (four of which are pure water) will supply an ample quantity for the remaining 63 miles. According to a very reasonable computation, which I have made, these springs supply 115,600 (one hundred and fifteen thousand six hundred) gallons per day. There are many springs and some streams between these springs and the Colorado of Texas, which is forty-four miles east of the Sulphur Springs of the Colorado.—Again, take Capt. Pope's statement of the amount of water discharged by the largest of the Delaware Springs, there is an immense supply of water there, which by special and not expensive arrangements, could, with facility, be used in going either east or west. There are seven or eight springs, then two or three of sulphur, the rest pure and excellent water. Captain Pope graphically describes one of them as bursting forth boldly from a limestone rock, in a stream as large as a barrel, and running off in a rapid current. Now, in computing such a stream, so described, we treat it as a cylinder. The head of a barrel is eighteen inches wide, and a depth or height of twelve inches or one foot displaced in one second, would give eleven gallons and two-tenths per second, and this consequently gives 672 (six hundred and seventy-two) gallons per minute, or 40,320 per hour, and 967,780 gallons per day (nine hundred and sixty-seven thousand seven hundred and eighty gallons per day.) Supposing—which the description of Captain Pope and Mr. Byrne fully justifies—that the other springs, all taken together, supply twice as much as the largest spring, and we have as the daily supply here, 2,903,340 gallons, (two millions nine hundred and three thousand three hundred and forty gallons.) The valley of the Pecos—if we consider the vast amount of water which the river discharges—is exuberantly watered, and there can be no want of water for 150 miles each way, west and east. It is not very broad, but the inclination of its bed and depth of two feet average, show a prodigious quantity of water, and copious fountain heads.

In conclusion, we are sensible that it is but an outline of the immense trade which this railroad would invite and sustain, that we have drawn; but it is an outline drawn in no spirit of exaggeration, but with a sacred regard to what we believe the truth. It is drawn in a spirit of good will to the interests of

those communities to which it will prove most immediately beneficial, and with a conviction of its ineffable benefits to the country at large. Its construction we regard as only a question of time; but there are imperious considerations, to which we have not now space to advert, that demand that this great work should be undertaken with promptitude, and prosecuted with zeal and efficiency to an early completion.

[From the Nashville Christian Advocate.

#### SOUTHERN PACIFIC R. R.

In our paper of the 28th of February we gave an extended notice of this great enterprise, now being constructed through the State of Texas. We then spoke of the great advantages of this over all other routes, in distance, topographical features of the country, arable land, wood, water, and climate. The munificent grant of land by the Legislature of Texas, and the plan of operations by the Company were also laid before the public.

These superior advantages place this route far in advance of all others, and will of themselves be the means of furnishing and putting into successful operation a great highway to the Pacific, long before any other road will have scaled the snowy summits of the lofty mountains that interpose their rugged slopes between the Father of Waters and the calm Pacific.

In that number we took occasion to speak of the great inducement held out for investment in the stock of this Company. We still entertain the same views, and look upon this enterprise as a fixed fact, that will soon be realized; and taking into consideration that the Company have in their grant of land means sufficient to construct and fully equip a first class road through the entire length of the State of Texas, which will be more than half way to the Pacific, and that Congress will be as liberal as Texas has been, and appropriate means for the construction of the road west of the Rio Grande; so that persons who now invest in this 5 per cent. stock will find themselves the fortunate owners of the greatest and best paying road in the world, and a large domain of public land, after paying all expenses of construction and equipment. We say the *best paying road* in the world. In our next we will show, by unequivocal and undeniable proof that a greater amount of commerce will pass over this than any other route at present known, and will, of course, pay better than anything in the old or new world.

We have watched the signs of the times for the last few months with much interest; we have noticed the tone of our exchanges, and we find one most potent influence at work in favor of this Company. People from all parts of the Union now agree upon this as the route to the Pacific. The press of the North and the East, of the South and the West, spread the same information before their hundreds of thousands of readers. Here, then, we see a voluntary association of great power springing up in favor of this Company. There is no object to which this power cannot adapt itself; no resource which it may not ultimately command; and a few individuals, if the public mind is gradually prepared to favor them, can lay the foundation of undertakings which would have baffled the might of those who reared the pyramids, and the few who can divine the tendencies of the age before it is obvious to others, and perceive in which direction the tide of public opinion is setting in, may avail themselves of the cur-



rent, and concentrate every breath that is favorable to their course. The exertions of a scanty number of individuals may swell into the resources of a large party, which, collecting at last the national energies into its aid, and availing itself of the human sympathies that are in its favor, may make the field of its labor and its triumph as wide as humanity itself.

The elements being favorably disposed, a speck of cloud, not larger than a man's hand, collects vapors from the four winds which overshadow the heavens, and the parched earth is fertilized by copious showers.

As in the physical, so in the moral world—the varying and conflicting events of life, and the no less jarring and discordant passions of the human breast, when once the channel is sufficiently deepened, will rush into an accelerating torrent, and be borne toward their destined end.

The power of voluntary association, though scarcely tried as yet, is of largest promise for the future; and when extended upon a great scale, is the influence most removed from shock of accidents and the decay of earthly things, renewing its youth with succeeding generations, and becoming immortal through the perpetuity of the kind.

**PACIFIC RAILROAD.**—The Platte Valley Railroad route to the Pacific, in latitude 41, is just reported by an engineer, who dates from Keokuk, Iowa. The proposed termini are Council Bluffs, on the Missouri, and Fort Reading, on the Sacramento; distance 1,800 miles; water plenty; wood do; about 1,000 miles easy graded, and the balance more expensive. The estimated cost is \$150,000,000; probable receipts \$55,601,948, doubling the present transit of persons between New York and California, and the freight carried between the two points.

**EXTREMES OF AMERICAN CLIMATE.**—From St. Louis, the following, dated January 19, came to this city by telegraph: "The weather is very cold here, and the river is frozen over, so that teams cross it safely. About 200 boats are waiting at Cairo, for the river to open, and a large number of emigrants are there in a destitute condition." We had, on the same day, from New Orleans, this: "The weather here is quite hot—the thermometer to-day indicating 80°."

### SOUTHERN PACIFIC,

OR,

**Texas Western Railroad Co. Agency.**  
THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.  
Feb. 14. 106 West Fourth Street Cin.

**A CIVIL ENGINEER**, who from long practical experience on Railroads in the Eastern States, and Indiana, and Ohio, is thoroughly acquainted with his profession, desires an engagement, either in charge of the repairs of a road in operation, or as an Assistant Engineer on construction. The most satisfactory reference in this city, and testimonial letters will be produced. Address "Engineer," at this office. mar27

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 80 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

### BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, APRIL 7, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.  
CINCINNATI, ..... MONDAY, APRIL 7.

### HOW SHALL THE GOVERNMENT AID A PACIFIC RAILROAD?

We have shown in former numbers of the RECORD, that the construction of a Pacific Railroad through the lands of the United States, will increase the value of the public domain four-fold. As a *proprietor*, then, the Government should make the road. But for various reasons of expediency, of constitutional scruples, of timidity and doubt, the Government seems not inclined to do any such thing. Well, then, if the Government will not make the road, and yet will be benefitted hundreds of millions, will it not *aid*, as a proprietor of lands, some persons or companies who, by means of such aid, will make it? We have no doubt, such is the purpose of a majority of Congress; but at the same time, there are not a few narrow-minded men, who can neither see *why* such a road should be made, nor how it *can* be! They are yet living in the dark ages, and scarcely realize that any railroad has been made, much less three thousand miles a year. With such men we cannot reason, and the world will never be much benefitted by their labors. Let them pass. Our present purpose is to present the *example of Congress for the benefit of Congress*.

First. Congress has given immense grants of land to the Illinois Central Railroad, to the Mobile and Ohio, to the Cairo and Fulton, and to other railroads. If the whole amount had been given to a Pacific Company, we have no doubt that company with aid of private capital, would have accomplished the whole work to the western ocean. But on what grounds were these grants made? Simply on the ground of *proprietary interest*. The objects in view were great and valuable; but we hesitate not to say that the construction of the Pacific Railroad is far more so. Congress, then, in these cases did precisely what enabled these roads to succeed, and will enable a Pacific Company to succeed. But let us mark well what they did *not*, as well as what they *did*. We have recently noticed Mr. Brown's bill, in the Senate, and criticized its unreasonable and impracticable features. Let us compare them now to the grants made to the Illinois Central, and the Ohio and Mobile Roads. 1. The Government did *not* require a *deposit* to secure the making of the road. 2. They did *not* require *payment* for

any portions of the lands. 3. They did *not* require any conditions save only, that the lands should be given in proportion to the *actual construction* of the road. And, is not this last condition amply sufficient for the security of the government against any possible defalcation? Does not the government hold the lands, in title and possession? It can keep them till the section of the road required to be made is made. What more is required? If no stronger or stricter condition than this, was required, for the grant of lands, in Illinois, Missouri, Tennessee or Alabama, why should it be required, in the far more difficult task of making a road across the unsettled portions of New Mexico, California, or Oregon? The truth is, to burden and embarrass a grant of lands for such a purpose, at this day, and for this purpose,—is to make the legislation of Congress alike inconsistent and unjust. Inconsistent it often is; but, to make it inconsistent at the cost of equity and justice, is what we hope not to see.

What then shall be done? Make a grant of land,—say thirty sections per mile—to one, two or three chartered companies, on as many routes,—*conditioned only on giving the patents on the actual construction of a section of 10, 20 or 50 miles*. As to routes,—make only certain limits within which each company must construct its line. The Middle Route might well be compromised by the adoption of the South Western Road, from St. Louis to meet the Texas road, as recently well described in the RECORD, by Mr. J. W. Taylor. The Northern route might be put within any limits, which the Lake interests might agree upon. The Southern Route is already fixed. Texas having made an immense and generous grant of lands, on the parallel of the 32°, and the Texas Western Company having availed itself of that grant, by charter, and commencement of the Road—that ground is *pre-occupied*. All that will then be asked of the government will be aid, in the construction from El Paso to San Diego. For this purpose, (for we can imagine no other,) the Gadsden Purchase was made; and without the Pacific Road, that purchase will be almost worthless. That tract is, we have reason to believe, rich in mineral resources, copper, silver, lead, and coal. But, extremely valuable as these may be, they can hardly be made profitable without some means of rapid and safe transit. Such only is a Railroad.

Having given our general idea of aid to a Pacific Railroad, we shall answer the only objections likely to be of weight.

First. The *rivalry* of routes.

These, as we have before stated, are practically reduced to *three*, the Southern, the Middle and the Northern. As to the Southern route, there really is but one good practical one south of 37°, and that is the Texas line of the 32° to El Paso. As to the Middle route, it might be confined between the 38° and 42°, and the Northern to any line above 42°. If there be only one Company proposed to accept the offers of government, let that one take the grant, within its chosen limits.

2. It may be objected, that an *irresponsible* Company might accept the offers. This *might* be the case, in any event; indeed, some persons are sure to strive for these grants; but all *irresponsibility*, not inherent in the nature of the case, will be avoided by a few simple conditions, viz:

1. Let the grant be made to a Company *chartered and organized*.

2. Let it prove a *bona fide* subscription of *one million of dollars*, with one fourth paid up *in cash*.

3. Let no lands be patented to it, till it has *made and is operating*, a prescribed section,—say twenty miles.

4. Let the grant be forfeited if the Company fails to make a given section in a given time.

Now it is *palpable* that under these conditions there can be *no irresponsibility*. The thing is not possible.

If there should be difficulty about choosing between rival companies for the same route, then let there be a provision for *bids*, so that the one requiring the *least amount* of lands should have the contract. This last provision may be put in if the government wants to confine the contract to *one* route only. In that event, the friends of the Southern, the Middle, and the Northern routes may bid against. But let the *bid* be in this form:—“Who will make the Pacific Road for the *smallest quantity of Government Lands*?” This will put the question in the right form, and determine which of the companies has the greatest amount of resources, *independent of the Government*. This is the true question, not which can deposit the most money in a bank. A Company may do the last, and have very small other resources. Let that be remembered.

☞ The want of our Pacific Railroad is felt in Europe as well as in America. If built, the European trade with China must flow over it.



## THE UNITED STATES COAST SURVEY.

There is no national enterprise of this country, upon which we look with more pleasure and satisfaction, than that of the Coast Survey. Millions have been expended upon public buildings, and tens of millions in the support of armies and navies, but these are far inferior testimonies to the high civilization and advanced knowledge of the country, as compared with that afforded by the skill, science and purpose of the Coast Survey. It is a most superficial observer only who can inquire what is the object and value of such an enterprise? No country has such a coast—thirty thousand miles—no county (not even Great Britain,) has in itself such a commerce. This immense coast is covered with rocks, shoals, reefs, strands and quicksands, to the dangers of which this vast commerce was exposed. To the safety of that commerce, accurate surveys and detailed charts are as necessary, as accurate machinery and sound boilers to a steamboat.

The accomplishment of these surveys and charts is a magnificent enterprise, worthy a great nation. The labor required was great; the science profound; the cost immense; the time long. It could only be undertaken by a nation who had attained the highest civilization, and realized its high demands. It was undertaken by this young republic before it had reached the end of its first half century, and now it is nearly complete.

We should be glad to give a complete history of this work, and the mode of constructing its operations; but our space here does not permit. From the annual report of Prof. A. D. BACHE, for 1854, we shall extract only such information as may serve to give our readers a general idea of the work.

In the year 1854, there were employed in the Coast Survey, nearly one hundred officers, civil and military, with several steam vessels and small naval craft. The astronomical instruments belonging to the Coast Survey cost \$170,000, and from this array of force, and vessels, and instruments, may be inferred the labor and expense of such a work, carried through thirty years. We may here remark, that to the *personnel*—the superintendent and officers of this survey—the highest credit should be given. Professor BACHE, who has now been Superintendent for several years, is admirably adapted to the position. Possessed of ample science; of cool judgment; a sagacious knowledge of men, and courteous manners. Mr. BACHE has filled ably, and honorably, a position which few men could fill. The officers he has selected to do the work, are taken generally from the very *elite* of the army, navy, and men of science. Many of them have been half a life time in this work. Their labors have been quiet, unobtrusive, and unnoised. Silently their work goes on; although they should be unpraised,

it will survive as their monument, to other ages.

The *mode* of the Coast Survey—at least its general principle—may be briefly described: It is by a system of *Triangulation*. A triangle is taken, we presume, because it is the *simplest* figure, by which the *position* of a point can be *ascertained*. To do this a *base line* must be measured, whose *exact astronomical position* is determined by observation. In his base line, the point at the third angle of the triangle, can be precisely calculated.— Sometimes this *base line* cannot be measured exactly on the immediate coast. In that case, it must be taken inland, and several triangles may be required to get the position of a fixed point on the line of the coast, and oftentimes many to ascertain the position of islands, reefs, &c. This is a great labor, and from its nature requires parties on land, and parties on the water; large vessels, and small coasters and row boats; soundings and measurements; in a word, all the complicated operations of land and water survey; in all climes and weathers. Some idea of the immensity of labor performed, may be gathered from a few figures presented in the report:

|                                      |               |
|--------------------------------------|---------------|
| Length of Shore Line determined..... | 15,902 miles. |
| Area in square miles.....            | 11,341 "      |
| Topographical parties.....           | 14            |
| Soundings, number of.....            | 3,253,908     |
| Topographical maps, original.....    | 416           |
| Computations, volumes of.....        | 409           |

Sixteen thousand miles of coast, with all the indentations, soundings, reefs, and shoals, have been every yard examined, measured, mapped, and given to the hands of commerce, as a complete *daguerreotypied view* of the American ocean coast. The extent of the work accomplished, is thus described in the Annual Report:

"The chain of triangulation of the Coast Survey, now extends, with a single broken link of fifteen miles, from Penobscot Bay, in Maine, to Bogue Sound in North Carolina.—South of this it crosses Cape Fear entrance, and passes up the river to Wilmington; includes Wigan Bay and Georgetown Harbor, and the coast from Ashtey River to St. Helena Sound, Calibogue Sound, and Savannah River, to the head of Argyle Island and St. John's river entrance; connects the Florida reefs and keys, from Cape Florida to Key Rodriguez, and from Pine Islands to Key West; extends from Chrystal River offing to Cedar Keys on the Western Coast of the Florida Peninsula, over Ocella river entrance; connects Mobile with New Orleans, and passes from Mobile to the Gulf, and across Mississippi Sound, and through Lake Boyne and Lake Ponchartrain to New Orleans; includes Galveston, lower and upper Bays, and East and West Bays, and the coast to the head of Matagorda Bay, and covers the entrance of the Rio Bravo del Norte. In some cases the main triangulation leads; in others, follows; affording first or last the check which the minor work requires. It rests upon carefully measured bases, which, when united, serve as bases of verification."

Nearly the whole Atlantic coast, it will be perceived, has been completed. A great deal of work has also been done on the Pacific.

It might very naturally be supposed that everything was known about our great harbors, bays, and rivers, which could be known; but such is far from being the case. But even the approaches to our great marts of commerce have not failed to yield actual discoveries, or developments so near akin to them, that it is difficult to draw the line between them.

"Gedney Channel, off New York, has associated the name of that veteran hydrographer, with discovery in the most frequented port. Blake's Channel, in the Delaware; Davis' Shoal, and Davis' Bank, near Nantucket; Stellwagen's Bank, at the entrance of Massachusetts Bay; Almys Shoal, off Cape Charles; Jenkins' Channel, across Cape Fear Shoals; Moffer's Channel, at Charleston; and Rodgers' Channel at Key West, have connected their skill, and patient research with the most thronged routes, and customary approaches."

We cannot quote more largely from the valuable Report of the Superintendent; but we thought no less notice than this due to the patient labor; the love of science; the zeal for knowledge; the unswerving pursuit of duty, which have characterised the officers of the Coast Survey, during the whole of their arduous and successful enterprise. It happens, unfortunately for the pursuit of science, and the higher duties of patriotism, that there are so few to appreciate or applaud the noblest works of either. We would fain add our contribution, however humble, to what we believe the well-merited praise due to the laborers in the Coast Survey.

NOTES AUXILIARY TO THE NUMBERS "ON THE PACIFIC RAILROAD," NEAR THE 32d PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT. BY THE AUTHOR.

NO. III.

In the 8th paragraph, for *this read the*, and it will then read "the road supplying itself."

Page 3d of the *Record*, in the paragraph beginning, "We will now show that this is not a sectional road," for "America" read "North America;" the words will then read, "the two greatest rivers of North America." The author was well aware, when he wrote this number, that the Amazon is the greatest river of America, having some three years ago written several articles on the opening of the navigation of the Amazon, in which a description was given of that river, probably more exact and full than was ever before given in any newspaper. The Mississippi is the father of waters—the Amazon is the king of rivers. The Missouri, at its junction with the Mississippi, supplies, it is conceded, the greatest amount of water to the united stream; but both are mighty rivers, to whose "wondrous length of course," not a few celebrated rivers are but as creeks.

I transfer the following in full from this number: "It is to be considered that it is



down stream to this route—down the channels of the two greatest rivers of North America, and all their numerous navigable tributaries. There are now constructing railroads which will connect with Fulton, Arkansas, which place is 150 miles from the Mississippi river; and some point will be selected on the Mississippi, whither the freight will be borne, either on the bosom of that river and its tributaries, or by the railroad which is in process of construction on its western bank. The city which will become this terminus will be great and flourishing."

It is impossible to say where this city will be located; but certainly on the west bank of the Mississippi. Should the South-Western Missouri Railroad be constructed, as proposed by James W. Taylor, Esq., in the *Railroad Record* of March 3d, there will be no new city soon. St. Louis will be the terminus—a great city already in existence. But it is making a detour for a large part of Ohio, Indiana and Illinois, to go by St. Louis, when their nearest way is obviously not far from the mouth of the Ohio—on the Mississippi, above it—to Fulton, in Arkansas. Supposing a railroad direct from some point as nearly opposite Cairo as is consistent with healthfulness, and of course secure from inundation, that is a point to which the Illinois Central Railroad would bring great quantities of light freight, consisting of our own manufactures, and of European imported goods. "From Cairo, at the mouth of the Ohio, where it connects with the great Central Road, of Illinois, a railroad is now in process of location and construction, through Little Rock to Fulton. At Little Rock it is met by a branch from Memphis." (Capt. Pope's Report, p. 65.)

From Cairo to the eastern verge of the Llano Estacado, or which is identical to the Sulphur Springs of the Colorado, is 825 miles. Ohio and Illinois would supply the coal necessary to the working of four hundred miles—about one-half this distance.

All this distance is through a country in which the railroad will pay, at a good dividend—not less than 6 per cent. clear, without reference to its being part of the Pacific Railroad near the 32d parallel. Long before its entire completion, the partially completed portion would pay at least five, perhaps six per cent. clear of all expenses. At the same time, that vast increase of the production, and of the value of land, of which I have spoken in my 4th Number, is a consideration of at least equal weight. The accession it would bring to the wealth of Texas and of Arkansas, would be not less than seventy millions (70,000,000) of dollars, and this within five or six years.

I might with propriety have included the whole, instead of two-thirds of the three great States of the Mississippi valley—Ohio, Indiana and Illinois—as sharing largely in the

profits of the line by the 32d parallel. And for the reasons that I have assigned in the text of this number, and because the railroads of those States are constructed in a manner to connect with the greatest facility, and at all seasons of the year, with the Pacific Railroad by the 32d parallel. And if such would be the case now, supposing the railroad by the 32d parallel in actual operation, how great would be the increase of facilities when those great States, so favorably located for connection with the line of the 32d parallel, shall have finished their own roads now in process of construction. In respect to Ohio, the following summary from the late message of her Governor, will show her magnificent position and prosperity, and that she would be admirably prepared to take immediate advantage of the great inter-oceanic railway by the 32d parallel:

"She has six hundred miles of navigable rivers, and eight hundred miles of canal; twenty-six hundred miles of completed railroad, and more than that number of miles projected and in course of construction. She contains a population, that, under a broad and enlightened policy, has increased, since the commencement of the century, from forty-five thousand to at least two and a quarter millions. The wheat crop of Ohio for the past year has been estimated by the Secretary of State at thirty millions of bushels, and the corn crop at eighty millions. The State of Ohio yielded fully one-eighth of all the corn that was produced in the United States, and our wheat crop was more than one-fifth of the aggregate of the Union."

My averment, therefore, in No. 3, "that this is not a sectional road, as has been alleged, but truly national," is, I think, made more conclusively manifest by further investigation. I may appeal in favor of its superiority, to its uninterrupted capacities for transportation throughout the year—that it is down stream to an immense area and a very large proportional population of the valley of the Mississippi—that it is connected with all the greatest Atlantic cities by railroads in operation or in process of construction; by lines nearly direct, or but slightly circuitous. I am in favor of the whole road, earnestly, to San Francisco, as well as to San Diego; but for some essential national objects, the construction to the Southern terminus in California would suffice.

With respect to the first section of this railroad, I conclude the notes on this number, by the following extracts from Capt. Humphreys' "Examinations," page 60.

"In general, it may be remarked, on this section of the route, near the 32d parallel, from the Red River to the Rio Grande, 780 miles, that the topographical features of the ground present no unusual difficulties, and many favorable circumstances; that supplies

of building material can be obtained throughout the line without excessive cost, and that the supply of fuel and water, throughout those portions destitute of it, can be had without greatly increasing the cost of transportation."

Feet.

|   |       |
|---|-------|
| "The elevations are:  |       |
| At Preston, on Red River, 641 feet above the level of the sea, the ground rises, in six miles, to the level of about..... | 1,200 |
| At the Upper Cross Timbers.....   | 1,782 |
| At the West Fork of Trinity.....  | 1,524 |
| At the Brazos River.....  | 1,700 |
| At the divide of the Brazos and Colorado Rivers..   | 4,237 |
| At the Colorado.....  | 3,989 |
| The border of the Llano Estacado is.....  | 4,278 |
| The greatest elevation of the Llano Estacado is..   | 4,707 |
| The general elevation of the Llano Estacado.....  | 4,500 |
| The Pecos, where crossed, is at an elevation of....   | 4,070 |
| The summit of the Guadalupe Pass.....   | 5,767 |
| The summit of the Waco Pass.....  | 4,812 |
| The general elevation of the table lands between the Pecos and the Rio Grande, from.....                                  | 4,500 |
| The elevation of the Rio Grande Valley at Molino.....   | 3,830 |

These moderate elevations, at which, near the latitude of 32°, snow never lies for any considerable time together, are very strongly contrasted with the elevation in a large part of the route of the 41st parallel, which rises to over 7,000 feet (seven thousand) and in many places from 8,000 to 10,000 (eight to ten thousand) feet.

#### NAVIGABILITY OF THE MISSOURI.

The Missouri enters the Mississippi in latitude 38° 50' 50" north, and in longitude 90° 13' 45" west of Greenwich. Below the mouth of the Kansas it pursues a direction nearly east, lies almost entirely within the State of Missouri, and is about three hundred and eighty-two miles long. Its banks are here almost continuously settled, while all the more prominent localities are occupied by flourishing cities, towns or villages. The soil is of surpassing fertility, and the adjacent country rich in coal, iron and other minerals. Cotton-wood is the prevailing growth in the bottoms, while willow is very abundant at the water's edge, and sycamore near the river and its tributaries; but there are also found, in great abundance, principally on the slopes which limit the immediate valley of the Missouri, the oak, walnut, ash, elm, and maple. The islands are very numerous, and some of them several miles in extent. They do not, as higher up the river, appear to owe in part their existence to the entrance of tributaries. They have nearly all a rich soil, but are kept by the action of the current in a transition state, either increasing in size from the constant deposition of new material, or undergoing destruction in consequence of the current driving against the islands through changes in the channel of the river.

Those changes are very marked in this river, which may be observed in nearly all streams, and which are or arise from the detrition of the banks on one side, and the formation of new ones at corresponding points generally on the opposite side. The detrition principally takes place on the side of the main channel, as along the outer circle of the bends. The current is only effectually checked when, after it has encroached in one direction for some time, it encounters the rocky bluffs which border the river valley. The growth of timber only delays its action; for there were noticed, in a great many instances, large and flourishing trees, roots and all, which, with the earth they grew in, had fallen into the river, and were floating down



to sink or be caught on some sand-bar, and thus to become a snag or sawyer, or perhaps a nucleus around which should be formed an island. The first settlers must have suffered very much from these causes; others, as those who have located below and in the vicinity of Council Bluffs city, have avoided their ill effects by placing their improvements as far from the river as practicable.

The destruction of the banks is not in all cases gradual, for I saw many instances to the contrary, and had reliable information that often an extent of several acres of land disappeared in a moment.

During a great part of our voyage, those changes, of which mention has been made, were much more marked on the right than on the left bank of the river: which may be accounted for by the fact that, while the river is confined in its course between two nearly parallel ranges of bluffs, it appears tending to approach the more westerly, and, as a consequence, must encroach principally on that side. It was noticed that many of the principal bends were turned towards the west.

I was informed that at some points the banks disappear more in low than high water; and this may be explained by supposing that the strong current, while it loosens the mass, supports it in its position as long as the water is high. One good effect resulting from the formation of these obstructions is, that it tends to give the river a sinuous course, which diminishes the velocity. As in the case of the Mississippi, so in this, if the river were straight the velocity would be too great for the purposes of navigation.

It results from the continually recurring changes to which the Missouri is liable, that at nearly every bend there is a sand-bar or island, and a series of snags and sawyers. These also generally occur wherever from any cause the water is still, or there is a counter current, and where there are eddies or whirlpools. The difficulty in navigation is to discover in season a continuous unobstructed channel. Concealed snags and sawyers are liable to occur in any part of the river.

The average velocity of this portion of the Missouri is a little over five miles an hour. By a rough measurement, made at Howard's Landing, not far above Booneville, I found the width to be about half a mile.

Some of the characteristics which I have not mentioned of this portion of the valley of the Missouri, are that the tributaries have generally much clearer water than the river itself, and are, from the depositions which there take place, narrower at their mouths than elsewhere; that the smaller of the tributaries lie, for the most part, within the two parallel ranges of bluffs; that in many instances the bottoms may be said to be swamp land, being occupied by numerous marshes, lakes, ponds, and sloughs, which diminish the value of the exceedingly rich land, and must cause the intermittent and other fevers to prevail to some extent; that the banks of the river are heavily wooded from the mouth of the Kansas to the Mississippi, there having been observed by myself but one locality, and that near the mouth of Grand river, which could be called a prairie; and that the two ranges of hills which limit the valley of the Missouri were judged to be from seven to fifteen miles distant from each other—the eastern range touching the river at St. Charles, Portland, Glasgow, Brunswick, and other points; and

the western below St. Charles, at Jefferson City, Booneville, Howard's Landing, Lexington, Camden, Liberty Landing, &c. The two continuing parallel to each other, and consequently diverging from the river between the points above mentioned.

Besides these characteristics, I will mention that the coal measures are the principal geological formation near the mouth of the Missouri, the magnesian limestone near Jefferson City, and the carboniferous limestone and coal measures from Howard's Landing upwards.

The town of Independence, not far below the mouth of the Kansas, and situated in a bend, of which the arc is twelve miles and the chord three miles long, is connected by traveled roads with Santa Fe and with Fort Laramie and the South Pass. Kansas, near the mouth of the river of that name, is also so connected.

Between Fort Leavenworth and the mouth of the Missouri, the principal tributaries are the Osage, Grand river, and the Kansas. The first is about three hundred and fifty yards wide at its mouth, but a little wider just above. It is navigable six months in the year for about two hundred miles, or to a point thirty miles beyond Warsaw, although steamboats have, in very high water, been to Harmony station, which is beyond the frontier of the State. Grand river is about two hundred yards wide at its mouth, and is navigable for steamboats, although the interests of the trade do not now cause it to be used for that purpose. Kansas river unites with the Missouri at an angle of about 150°. A low bottom, nearly a mile wide and several miles long, occurs just below its mouth. The angle between the two streams was probably, in former days, about 80°; but a deposition having taken place at the mouth of the Kansas, in the same manner that islands are continually forming in the Missouri, and being partly caused by the difference in velocity of the two streams, the Kansas has shifted its channel to the north. It is about 300 yards wide at its mouth, and, with the exception of two sets of rapids, open for navigation for about 150 or 200 miles. The rapids, I was informed, could be improved at a moderate cost. Flowing as it does through a tract of country which is not in any other way accessible to steamboats, and which possesses many resources, the Kansas must assume some importance at a future day. I did not see its valley above its mouth, but, having formerly traveled over the country for some hundreds of miles west of Fort Leavenworth, can say that the valleys of the streams, for at least 150 miles west of that point, are favorable for agricultural or grazing purposes; and from their proximity to the Kansas, as well as from information received, I would infer that its valley has the same advantages.

In our ascent of the river, we proceeded at the rate of about five miles an hour, halting nearly two hours every day for the purpose of procuring wood. The ordinary price of this along the banks of the river was from two to two and a half dollars per cord, according to quality; and the consumption of it by the steamboat at the rate of about two cords per hour. We reached Howard's Landing, five miles above Booneville, at 12 M., on the 24th of May, and halted there until 9 o'clock in the evening, for the purpose of repairing some part of the boat's machinery. We found the current very rapid at Brunswick, but met with no other obstruction at this point. There was

formerly a large island opposite this town, and it has not yet entirely disappeared.—The current was observed to be more rapid between the island and right bank shore than next the outer side of the elbow. On the night of the 25th and on the 26th, above Brunswick, the steamboat was much delayed by sand-bars. In running on one of these, the ordinary events which transpire in rapid succession are the harsh and grating noise heard, the trembling motion communicated to the steamboat while being brought to a state of rest, the inclination from stem to stern which it is at the same time caused to assume, the ringing of bells to stop the engines and to cause them to work backwards; and then, this failing to relieve the boat from its awkward position, the resort to the double set of spars, pulleys and tackling, with which every Missouri river steamboat is furnished. The discovery in season of a continuous unobstructed channel is generally easily made by the skillful pilot when there is nothing to interfere with his vision; the slightest ripple on the surface of the water above a sand-bar, and the divergence of the current, which occurs near a concealed snag, however unapparent to an ordinary eye, are unerringly detected by him, when he can distinguish objects at the supposed distance. But sometimes the channel has an oblique direction, and over the entire cross section of the river indications of obstructions may be seen. It may accordingly be inferred how much more dangerous is the navigation by night than by day, and how great must be the difficulties when the night is entirely dark. We reached Lexington a little after noon on the 26th, and obtained there about five hundred bushels of coal. Just above this town the river was found to be very rapid. The points which, in this report, are mentioned as being particularly rapid, were generally such that our steamboat, when struggling directly against the current, made very little or no progress. We passed them in taking advantage of the current by diagonal steering, and by using rosin, pitch, &c., to increase the tension of the team. Not far from Lexington we passed on the 26th a short turn in the river, with a rapid current, and called "Devil's Bend."

The permanent obstructions in the river below the mouth of the Kansas are a chain of rocks about twelve miles below St. Charles, and one a little below Sibley. I could obtain no facts as to the effect these now have upon the navigation.

I have thus, with the exception of stating some facts as to the climate, statistics of navigation, &c., which will be done farther on, described that portion of this river which lies within the State of Missouri. As most of the characteristics I have mentioned are applicable to the other portions of the river over which we traveled, I shall, as a general thing, enter, in the following part of this report, into a particular description only when the character of the country or river is essentially different from that which has been considered. I have dwelt somewhat on the changes which take place in the positions of the banks of the river and its channel. These occur in a similar manner, but in different degrees, at successive points along the whole of the Missouri that was surveyed.

As the lower subdivision of this river is far more important than any other, so also is the State of Missouri than any other part of the vast tract of country watered by this stream. That State, with its great agricultural and



mineral resources, from its central position, its connection by traveled roads with all the territories, as well as the two great harbors of the Pacific, and the facility of communication by navigable streams with the extreme northern and southern portions of the Union, will, it seems to me, be very important as a source of supply to any line of railroad which may be directed across the continent.

[CONTINUED.]

## Opinions of the Press.

[From the Nashville Christian Advocate.]

### SOUTHERN PACIFIC R. R.

In no other way can the prosperity of a country be more strikingly manifested, than by the perfection of its roads, and other means of internal communication. The system of railroads, canals, plank-roads, post-roads, river navigation, and telegraphs possessed by the United States, presents an indication of its advancement in power and civilization more wonderful than any feature of its progress. In truth, our country, in this respect, occupies the first place among the nations of the world.

The number of miles of railroad in the United States in operation on the first day of January, 1848, was 5,265; the same on the first day of January, 1853, was 13,315; and on January 1st, 1856, there was 21,440, averaging for the last three years 2,708½ miles built and put in operation each year. The history of no other country presents a parallel to the extraordinary increase of railroads in this. There are in it more miles of railroad than in all the rest of the world, while the progress of these works is unchecked, only as the wants of the country are fully supplied. Of the power of railroads to develop the resources of a country, extend commerce, promote civilization, and expand the great and growing circle of Christianity, we need not speak; these facts are understood, and are no less astonishing than true.

We come now to speak of the trade and commerce that must of necessity pass over the Southern Pacific Railroad, and will, as we stated in our last, make this the best paying road in the world. The location not only protects it from all great competing interests, but insures accessions to its business from almost every other road now built, or to be constructed, either east or west of the Mississippi. It is, in fact, the great trunk road, the national highway to the Pacific, and will, when completed, open up an avenue of trade for the united commerce of Europe, Asia and America. In order to show that these statements are not made without full consideration, and that they are sustained by facts and figures the most conclusive, we will present some details to this point. It is well understood that distance, time, and cost of transit are the controlling laws of trade, and these laws will be obeyed in spite of all human legislation. For instance, we see the trade of the eastern cities with our Pacific coast carried across the Isthmus of Panama at an expense of \$500 per ton, when the same goods can be shipped to and from the same ports in clipper ships, around the Horn, for \$45 per ton.—Here time is the great object that enters into the mind of the merchant. From sixty-five to ninety days are saved, and this controls the trade, and directs it over the shorter route, without reference to cost of transit. We

will not dwell upon the rich and growing trade of Texas, New Mexico, Chihuahua and Sonora, or speak of the transportation of troops, mails, and government stores, or of the overland emigration to California that would necessarily (by the saving of time and expense) be transported on this road, were it to extend only to El Paso; for it would be less than eight hundred miles to the Pacific. These of themselves would render it as productive as any road in the United States, free as it must be for many years to come from all competition. But when we take into consideration that the immutable laws of trade will force the commerce of America with Asia, and the immense trade of Europe, Asia, and Australia over this route, the Southern Pacific Railroad assumes a position beyond comparison, and without a parallel.

Let us examine into the facts, and see if these things are so. There are two routes by which the trade of Europe and America now reach Asia: one by the Isthmus of Panama and the Pacific Ocean, the other by the Cape of Good Hope and the Indian Ocean. From New York to Canton, by the Panama route, is 13,138 miles; time by sails, one hundred days; while the distance by this railroad route is 10,000 miles, and the time by steam thirty days—showing a saving of 3,138 miles in distance, and seventy days' time on each trip, as compared with the Panama route; making the distance on the whole voyage, out and return, 6,276 miles less, and the time 140 days, or almost five months shorter than the Panama route can ever afford.

Now, as to the route by the Cape of Good Hope: From New York, by the Cape of Good Hope and the Indian Ocean, is 14,255 miles, and the time by sails averages 120 days. As to this route, then, the proposed railroad presents the advantages of 4,255 miles of distance, and ninety days of time each trip—making, for a voyage out and return, a saving of 8,510 miles in distance, and 180 days, or just six months of time, by the proposed railroad route. So much in relation to the commerce of America with Asia, New York being given as the point of departure.

The same two routes are also the routes for European commerce to and from the Asiatic ports, differing only in time and distance from our own in that particular. From London to Canton, by the Cape of Good Hope, is 13,330 miles, and the time by sails 107 days. By this railroad route, the distance from London to China is 12,000 miles, and the time fifty days—thus saving to the London merchant the distance of 1,330 miles, and fifty-seven days of time on each trip, making a saving on the the voyage, out and return, of 2,660 miles, and almost four months of time. From Australia to London, by this route, there would be a saving of ten days of time over the Panama route. It will be seen by these figures that this route will give to our own commerce the advantage over that of Europe, by the whole of the Atlantic part of the voyage, while as now Europe has the advantage of our own to the same extent. This reversal in the course of commerce, and bringing it from around the Cape of Good Hope across our own continent, must give to our merchants the whole carrying trade between Europe and Asia, while they keep the entire control of our commerce with both.

The saving of both time and distance, as has been shown, is immense, when considered in relation to the vast amount of trade to be affected thereby—and it follows, of course,

that the cost of transportation must be reduced in a ratio corresponding to the reduction of both time and distance. The operation of those fundamental laws of commerce will, therefore, effect a complete revolution in the tides and channels of trade; and will, with this improvement accomplished, of themselves divert the great bulk of trade, now sweeping by millions around the great African cape, across the bosom of America, and make this country the great focus of commercial transactions of all civilized nations.

That trade, immense beyond estimate, is now within the grasp of our own people.—And with such a world of commerce before us, and all beckoning us to come and occupy, how long will it be, think ye, before the iron ring shall wed the Atlantic and Pacific shores? How long will our people continue to encounter the stormy cape, or commit their commerce to the hands of foreign transit companies, across foreign States, when a railway channel is opened to them, in all its course upon our own soil, under the guardianship of our own laws, under the supervision of our own people, and to the saving of tens of thousands of miles in distance, and millions of dollars in costs? That work is even now in progress, and in due time and by due exertion will be accomplished.

America will then stand intermediate between Europe and Asia, and into her commercial channels will be poured the imperial wealth of both. The tide of commerce then must turn from its present circuitous course, and swell through every avenue and channel of our trade, by the simple yet irresistible operation of its own fundamental laws. \*\*

For the above facts and figures we are indebted to an intelligent friend, who has bestowed much attention to the great internal improvements now in progress in our vast country.

### RAILROAD TO THE PACIFIC.

Below we give to Congress and the country the action of the Ohio Legislature relative to this great national work, and we recommend its tone and spirit to other Legislatures now in session.

On motion of Mr. Smith, of Franklin, the following resolutions were adopted:

*Resolved*, by the General Assembly of the State of Ohio, That our Senators and Representatives in Congress be requested to use their best endeavors to procure the passage of a law by Congress, making adequate provision for aiding in the construction of a railroad to the Pacific Ocean on such route or routes as they may deem to be most practicable and best calculated to advance the interests of the country.

*Resolved*, That the Governor of this State be requested to forward to each of our Senators and Representatives in Congress a copy of these resolutions.

After passing the House with but two or three noes, it was sent to the Senate and received the unanimous assent of that body.

MEMORIALS.—We are daily receiving a large number of memorials for the Pacific Railroad, which we are forwarding to Congress. Will the friends of the enterprise exert themselves to hurry them forward? Now is the time to work:



## PACIFIC RAILROAD—SOUTHERN ROUTE.

We must have a Railroad to the Pacific. There are many preliminaries to be settled, and the expenses of construction and working will be enormous, but the road must be built—it is a national necessity. When the idea of the road was forced prominently before the people by the sudden greatness of our possessions on the Pacific, there were many wild fancies concerning the enterprise. And it was natural that there should be, for there is no subject that appeals more strongly to the imagination. On the opposing shores of the great tranquil sea are the opulent regions of the Orient, and wherever the current of commerce with them has flowed, the capitals of the world have arisen. It was a popular belief, instigated by the eloquence of Statesmen whose imaginations had been captivated, that if a great railroad could be constructed across this continent, it would draw the fertilizing stream of trade between Europe and the Indies, and that we would gather the golden and imperial profits of that intercourse—that Palmyras and Tyres would spring, as it were, out of our soil. It is usually conceded now, we believe, that calculations, upon the presumption that the commerce of the lands where the far West becomes the East, would cross our continent in Railroad cars, were delusive. But as these oriental vapors have been dissipated, the grade of the plain facts in the case has been made more manifest. It is enough to say in this place, that the road is demanded by every consideration which it is reasonable to presume is held dear, by the most patriotic, money-making and money-loving of nations.

The question now most pertinent and most agitated, is, on what route can, or shall, the road be constructed? In considering this question, we must look at it with the breadth of intellect and scope of vision demanded by the continental dimensions of the enterprise. All narrow and sectional views must be cast aside, for the work in hand is of an eminently national character and importance, and to accomplish it a national effort is required. If this work does not properly belong to the Government, it is certainly a job for the whole people. We have recently published several documents setting forth the advantage of the Southern Route, and testimony in favor of that line accumulates upon us. It runs along and near the parallel of north latitude 32°, through the State of Texas and the Territory acquired from Mexico under the Gadsden Treaty, to the junction of the Gila and Colorado rivers, and thence through California to the Pacific. That there will be many local prejudices excited against this line we do not doubt. The people of Chicago may contend that there is nothing equal to a line running as near the north pole as possible, and the St. Louis folks may regard with perfect contempt, any proposition to construct a road that will not in a special manner benefit their city. We have a better point of observation than either, being so near the center of North American civilization that we can look with complacency on the struggles going on around the edges of the country, and judge with impartiality of the differences among frontiersmen. We hold that if a road is built across the continent, it will not be essentially important at what point it joins our system of Railroads. The object is to construct the road where it can be done most cheaply, and where it can be most easily kept in order. The tremendous snow storm that buried trains in Illinois last winter, was a solemn warning

to those who regarded lightly the perils of storms on the mountains and the vast plains over and through which the central route leads. But this subject we discussed last winter, and we care not to recapitulate our remarks now, and will proceed to examine some of the advantages claimed for the Southern route.

From a recent report of the Hon. T. Bulter King to "certain New York capitalists, in behalf of the Texas and Gadsden route," we quote the passages following:

"The charter of the Texas Western Railroad Company permits the work to commence at a point on the eastern boundary of that State, which will afford the greatest facilities for connecting it with the railways which are extending in that direction from St. Louis, Cairo and Memphis, through Arkansas, by way of Little Rock and Fulton, from Vicksburg, Louisiana, to Shreveport, and from New Orleans, by the Opelousas Railroad, thus bringing the system of railways throughout the Union, north and south, by converging lines, to that point on the eastern border of Texas and connecting them with the line under consideration to the Pacific.

"From the eastern boundary of Texas to the Pacific, on the route surveyed by Col. A. B. Gray, the Engineer of the Texas Western Railroad Company, there is 1,621 miles, which will be very much diminished by the grade of the road, making it not far from twice the length of the Illinois Central Railroad. This is supposing the road to strike the Pacific at the nearest point. If it be extended to San Francisco, the distance will be increased some five hundred miles.

"The climate on this line is mild and salubrious, being free from snow and ice in winter, and the diseases caused in southern latitudes by miasm in summer. Uniting, as it will, in a healthy region, with the railroads leading north and east, a transit over it at all seasons of the year will be safe and pleasant. The lands reserved in Texas to encourage the construction of this work through that State, are not surpassed in fertility by any other portion of the Union.

"Texas grants to the company making this road, in compliance with the terms of the charter, sixteen sections of these lands, or ten thousand two hundred and forty acres, for every mile of road constructed. If, after the work shall be completed, these lands prove to be worth five dollars an acre, they will produce a fund of \$51,400 per mile, or a reliable basis for a credit to that amount."

But we have information of the Southern route that is later and less open to suspicion than this. On the 11th of October, Lieut. Parke, of the U. S. Topographical Engineers, with his party of survey, arrived at San Antonio, Texas, from the West. The party consisted of Lieut. Parke, commanding, A. H. Campbell, civil engineer, N. H. Hutton, H. Custar, assistants, G. G. Garner, astronomer, Dr. Antisell, physician and geologist, and had been in the field actively engaged since the 22d of November, 1854. From that date until the close of May last they were engaged in California. On the 26th of May they left San Diego, and reached the Rio Grande at Fort Fillmore on the 6th of August, having spent most of the interval in the examination of that extensive country which borders the Gila. The Washington Union says:

"Lieut. P. has been highly successful in his explorations, which go to prove that the line examined near parallel 32° is the shortest and easiest route to California, requiring no

tunneling, there being no steep ascents, and goods can be carried over the whole route; and by avoiding Tuscan and striking for the Gila, which receives the San Pedro, the long and dreadful hornada of ninety miles may be avoided. Even as a wagon and emigrant route, this new one proposed and traveled by Lieutenant Parke in this expedition will save distance and fatigue to animals, as more grass and water are to be had than by the "commission-boundary" route, or "Colonel Cook's trail." By proceeding almost due west from Cook's Springs, by Ojo de Vacca, a series of valleys running north and south is reached, bounded by short ranges which can be travelled round—these valleys looking round into each other, and tending northwest to the Gila river, which may be struck where the fertile little valley of San Pedro (the Rio Chiquito of the Apaches) meets that river; in this course every mountain range is avoided, and a country well supplied with gamma grass is travelled over."

There are several branches to this subject which will require consideration in another article.—*Cincinnati Commercial*.

## THE LOAN BILL.

We give below some sensible remarks from the *Houston Telegraph*, relative to the policy to be pursued by States in aid of the construction of railroads:

This great measure, so often settled by public opinion as the policy of the people, after passing the Senate by more than a two-thirds vote, was left in the House among the mass of unfinished business, to be acted on at the session in July next. There was no measure before the Legislature of so great importance to the growth and prosperity of the State—none whose influence would have been so generally and immediately felt by the people at large. If this bill had become a law two years ago, as the people expected, from one hundred and fifty to two hundred miles of railroad would have been constructed in various parts of the State, and as many millions of dollars added to its wealth. The San Antonio and Gulf Road, the Harrisburg, the Houston Road, and the Texas Western Road, commencing at Marshall or Jefferson, might have been completed from 25 to 75 miles each. The State would have advanced to the roads probably \$1,200,000, while the companies would have expended \$2,400,000 in addition, making a total expenditure of \$3,600,000. Every meritorious road in the State would go on vigorously, if the State were to advance it from \$6,000 to \$8,000 per mile. There is no section of Texas that can do more than prepare the roads for the iron. The most wealthy companies in Indiana, Ohio and New York did no more, when iron and equipments could be obtained on a credit. When railroad materials were a drug, iron could be had for railroad bonds. Such arrangements, owing to the great and constantly increasing demand for rails, cannot be effected now, but the bonds of the companies must first be negotiated with capitalists. In Ohio, where there is so much population and wealth, and so much external commerce and travel passing over her railroads, two-thirds of the capital for their construction was borrowed. But for the aids thus obtained by credits, Ohio would have less than two-thirds of the amount of railroads now in operation. In this State, with a loan from the Treasury equal to the cost of the iron, a land bonus, as a basis of credit for any other loans required, and rea-



sonable investments of labor or money by the people, to prepare the grading and superstructures, we can build roads as fast as Ohio did, and faster than any State of the South. The money is in the Treasury, producing but five per cent. interest, while the Loan Bill provides that companies loaning it shall pay six per cent.; and yet while every man in the Legislature, and out of it, knows that the passage of the bill will stimulate the construction of more than one hundred miles of railroad per annum; and while their constituents are losing half their crops to get them to market—a loss that the passage of the bill will obviate, to the majority of planters, in two years—they make it the foot ball of the House, to trade and traffic with, and to carry upon its popular shoulders other measures of less favor and less utility. Two-thirds of the people are in favor of the policy of the bill, as expressed in large conventions throughout the State, and at the elections, three years ago. Gov. Pease, himself, was first elected as a friend of the policy. At his last election, he was nominated as a Democrat and an Anti-Know Nothing, by the Democrats, who have since, in the Legislature, and in the convention at Austin, emphatically repudiated his State plan views.

How long are the people to be baffled? How long is the country to wait for internal improvements? How long are the planters to endure the losses incident to the present modes of transportation? An aggregate loss to them, two years ago, as estimated by Messrs. Mills, of Galveston, of \$1,000,000. At these figures, the expenditure of three millions of State money by the railroads now in progress, in addition to their own funds, would save to the planters the entire amount loaned in from three to five years. And while that amount is saved, several hundred millions will be added to the taxable wealth of the State. Suppose we say the taxable wealth is thereby increased but \$100,000,000, the State's revenue from taxation also increases \$150,000 per annum; it simply resolves itself into this: If the \$3,000,000 is loaned to the United States, and remains in the Federal Treasury, it does not add one dollar to the wealth or revenues of the State—nothing to its prosperity, and it cannot operate to increase its population. Loan it to railroads, and the additional revenue to the State is equal to \$150,000 per annum, or five per cent. on \$3,000,000, so that the six per cent. paid by corporations is so much clear gain. That is the result, financially, to the State. To its citizens it gives value to every kind of property, and to every occupation and investment; it will operate as a donation to them of not less than \$100,000,000, in the increased valuation of their lands, while it will add several millions annually to the general productive wealth. These are not imaginary figures, but results that will as certainly follow railroad investments in Texas as they have in every other State of the Union. Every day public sentiment is increasing in favor of the Loan Bill, and every planter that rides upon the Harrisburg, or upon the Houston Road, who was not before a friend of the loaning policy, goes home its eloquent and zealous advocate. He sees that the State, without inconvenience to herself, can so aid the roads now in progress, or hereafter to be started, as to give much more speedy relief to the planting interest. He sees and feels that the difficulties under which the planter now labors would speedily vanish if the State would accord that credit which the companies

must otherwise seek abroad. And, if we mistake not the signs of the times, such a voice will come up from the people at the July session, as will insure the prompt passage of the Loan Bill, and the defeat of the miserable factions in the Legislature that have been seeking, by every species of artifice and proviso, to encumber and embarrass railroad corporations, and prevent the construction of railroads by the people.

From the Chicago Democrat.

#### THE PACIFIC RAILROAD QUESTION IN CONGRESS.

We presume most of our readers noticed the telegraphic announcement that on Thursday last a bill was introduced into the Senate by Mr. Brown, of Mississippi, for the construction of a railroad and telegraph line from a point on the Mississippi River south of latitude 37, to the Pacific, at San Francisco. As the matter is of some importance, we reproduce the provisions of the bill.

The bill grants about 4,000,000 acres of land, for which the company pay fifty cents an acre before obtaining a title, and are to be required to deposit \$50,000 as security that the work shall be faithfully performed, according to the provisions of the bill. Within eighteen months one hundred miles of the road must be completed; the Government to pay \$600 per mile for carrying the mail till the road is finished, and for ten years thereafter and such reasonable sum as the Secretary of war may determine for carrying troops, munitions of war, &c. The road is to be forfeited within ten years, and all lands except those paid for to revert to the United States. The bill grants the right of way for 400 yards wide; gives no exclusive privileges, but allows any company to construct roads when and where they please, and obtain such favors from Government as they can. Referred to the Committee on Pacific Railroad.

The bill of Mr. Brown contemplates the carrying out of the project of Robert J. Walker and his associates, who some time since secured a charter for a railroad through Texas pointing to the valley of the Gila, a small portion of which has been constructed. This is what is usually called "the Southern route to the Pacific." It passes through much rough desert country after leaving the borders of Texas, but we presume it is practicable. In the valley of the Pecos River there is a great deficiency of wood and water, but the recent explorations of a surveying party sent out by the Government, demonstrated that both can be supplied. By sinking an artesian well an abundance of water was found, and a rich coal deposit was pierced in boring.

Though this route is not our favorite one, we do not feel disposed to throw any obstacles in the way of the construction of the road. The past efforts of congress toward the adoption of some plan for the construction of a railroad to the Pacific show pretty clearly that Southern members will not consent that national aid be extended to a project for the building of a road over either of the Northern routes until the claims of their route are considered. Local pride and self-interest are involved in the question, and also something of the same sectional feeling which prompts the South to demand equality with the North in the settlement of the Territories. This may be a narrow view of the subject, but these feelings exist, and therefore must be taken into the account.

We are in favor, then, of extending aid to

Mr. Walker's company by a liberal grant of land. Four millions of acres may, perhaps, appear an extravagant allowance; yet we are to consider that for much of the way the land will never be worth anything without the road, while all that portion of it which now presents inducements to settlement would be greatly enhanced in value. Nobody now urges the objection of land monopoly to grants of lands to aid in the construction of railroads. However liberal the grant may be, where a road is really needed, it is sure to enrich the public vastly more than it can the company. We need not go out of our own State for illustrations on this point. The Central Company will make a colossal sum by the increase in the lands in its hands, but we are sure that no one who considers the immense benefits which its various lines have conferred upon the State will grudge the company its good fortune.

Let all proper aid be extended to this project for a road over the southern route to the Pacific. The advocate of northern routes need not feel any jealousy of it. We must have ultimately several railroads to the Pacific. The geographical conformation of the country and the spread of population, point to the South Pass, and from the head waters of the Missouri to Puget Sound, as natural routes across the Rocky Mountains to the Pacific. In both cases we may say that important sections of the roads which are to traverse them have been already constructed. Let us treat the southern project in a liberal spirit, and hereafter its friends cannot, with any show of fairness or consistency, refuse reasonable aid to our northern projects.

#### INTERCOURSE WITH CALIFORNIA AND OREGON.

Editorial Correspondence of the New York Tribune.

WASHINGTON, Saturday, March 29, '56.

If the Roman Republic, in the darkest days of its ruthless Paganism, had conquered and annexed a fertile and gorgeous region beyond the Lybian Desert, yet had neglected for ten years to connect that region with its earlier possessions by a substantial, practicable highway, I have no doubt that this neglect would have subjected it to the grave rebuke of its historians from Polybius to Arnold. Yet it is now nearly ten years since the American flag has waved in undisputed ascendancy over the modern Ophir, yet it remains to this hour separated from the Atlantic States by a dreary, inhospitable desert, the haunt of the wolf and the savage, which a few hardy pioneers annually traverse with their families and herds at the cost of infinite peril and suffering, losing a whole season in a journey which might be completed in ten days, and should be at furthest in thirty. To-day, the letter of a miner in Nevada, a pioneer on Puget's Sound, to his wife in Iowa or Missouri, must travel some distance westward, then voyage far southward, next cross the Isthmus of Darien in a foreign and semi-barbarous country, thence take another voyage north-eastwardly to New-York, and now start afresh on an overland trip of twelve to fifteen hundred miles north by west to its destination, making a circuit of some six or seven thousand miles to overcome a distance of less than two thousand. And there is no more need of traversing this immense circuit than of sending letters to Siberia on their way to Liverpool.

One of the earliest and most practical suggestions for an overland route and mail to



California and Oregon was that of Mr. H. O'Reily, the telegrapher. He petitioned Congress to have the United States dragoons employed in building stockades at distances of twenty miles each from Weston or Independence, (Mo.) to the nearest settlement in California—each stockade to contain accommodations for twenty men and their horses. A patrol from each would meet one from that on either side daily, receiving and delivering a letter mail, so that each post would daily give the hand to that on either side of it, and the mere failure so to connect would be a signal of savage hostilities, which would be immediately passed along the whole line, followed by a concentration of force on the point assailed. Each post would inevitably afford a generous market for the sale of vegetables, game, forage, &c., at the same time affording protection to settlers around it; while the road daily traversed by the mail carrying patrols would inevitably be improved and constantly rendered more and more practicable. Protection being thus vouchsafed, Mr. O'Reily offered to construct a telegraph line along the whole route forthwith, asking no grant of money or land from the Government, but finding associates willing to embark in the enterprise with a hope of gain. Congress could never be induced to act on this project, tho' I can imagine none less objectionable.

There are now three bills before the Senate looking to the establishment of an Overland mail to the Pacific. They are

1. Mr. Weller's—proposing that the P. M. General shall advertise for a weekly mail to be conveyed in four-horse post coaches from the Mississippi river to San Francisco in nineteen days the first year, and seventeen for three years thereafter—said mail not to exceed three hundred pounds in weight without extra compensation, and not to cost more than \$250,000 per annum. The contractors to choose their own road, (which is to be protected by military posts at the points most exposed to savage attack,) and to be allowed \$150,000 from the Treasury, to be expended in making bridges, sinking wells, &c., so as to render the trip at all times practicable.

2. Mr. Brown's—proposing to incorporate a company to build a railroad and telegraph to California south of latitude 37°, and, as an incitement to build it, giving to the corporators thirty (mile square) sections of land for each mile in length of road; also, \$5,000 per mile as a loan, (to be secured by first mortgage,) wherewith to purchase the iron; also, \$600 per mile per annum for carrying mails thereon until the work shall be completed and for ten years thereafter; also, the right of way for a width of four hundred feet.

3. Mr. Weller's Railroad and Telegraph bill—proposing to give a company twelve miles in width of the public lands and \$25,000 per mile in United States Six per Cent. Bonds (the latter, as a first mortgage loan); also, not more than \$300 per mile per annum for carrying the mails.

Such are substantially the leading provisions of the several bills now before the Senate looking to the opening of a direct overland mail-route to the Pacific. Mr. Denver, from the Select Committee raised on his motion, has reported a railroad bill, which I believe not vitally unlike that last condensed to the House, but it is not yet printed; I do entreat rather than hope that this session may not close without some decisive and affirmative action on the subject.

H. G.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc.; more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance.*

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Meadeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, APRIL 14, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, . . . . . EDITOR.  
W. WRIGHTSON, } ASSOCIATE EDITORS.  
T. WRIGHTSON, }  
CINCINNATI, . . . . . MONDAY, APRIL 14.

#### THE TEXAS ROUTE OF THE PACIFIC R. R., AND SOME OF ITS ADVANTAGES.

We have stated, in other articles, some of the strong and ontiroly incontrovertible arguments in favor of the Texas route to the Pacific. One of those—that of *climate*—is ontirely decisivo. A railroad may be mado on the routo of the Platte river, or from Milwaukoe or St Paul to Pugot's Sound—and thoro is no doubt that Pugot's Sound is one of the most advantageous outlets for such a road—but, whon mado, what will it be worth? Tho *practical results of running* a road aro, at last, those which dotormino its valuo. To *make* a railroad on any route, and in any placo, is always a possible thing; but is it always worth making? Here the question of *climate*, as we havo horotofore shown, is one of vast importance. In the month of January last, tho railroads across the Alloghonios, at tho low summits of 2,500 feet, have lost moro than they gained. The winter, even in the latitude of 40°, was almost destructive of railroad action. It is, therefore, perfectly plain that a railroad above tho latitude of 40° must *cost* a groat deal moro to run it, in any ovent; but whon wo come to run such a road up an inclined plain, whose summit is 7,000 feet in height, it is palpable that climato alone will arrest its operations during much of tho year.

Another reason, but wo grant a less forcible one, is that the Texas road can be mado for scarcely moro than half the cost on the other routes. If a private company is to construct the work, then this fact becomos of great consequence.

There are many reasons of loss importance, also in favor of the route of the 32d parallel; but wo wish to call the attention of our readers to ono which has not horotofore been considered. We moan the *greater business* which the Texas Pacific Road will have, at and overoither of tho above routes. Wo say thon that an examination of tho *local resources* of the different routes will show the Southern route to be far preferable.

1. As to through business, from the Mississippi to the Pacific, we grant that if there were but *one* road, tho amount would be noarly the same, whothor it were mado on one routo or tho other. For if there wore a Pacific Railroad, all the business between tho Atlantic and the Pacific would take that routo at any rate; but, even in a Pacific road, the local resources of the road must in the end yield its only profit. This is the universal law of long lines of railroad.

2. We como, thon, to consider tho LOCAL RESOURCES of the Texas Pacific Road. We are woll aware that as the Pacific Road, on any route, is rogarded as going through a wilderness, ora barron, (a popular delusion,) to speak of *local resources* will at first be scouted; but wo shall proceed to show that thoro are local resources, and those of immenso valuo. In tho first placo, wo should premise that on tho northern routes, from the borders of Iowa and Missouri to tho Pacific, thoro is now nothing to create commerce, and nothing to promise it in futuro, except what may arise in the now territories of Kansas and Nobraska. From thoro to Utah and Oregon is a vast region, composed mostly of the barron slopes of the Rocky Mountains, and tho numerous ridges and spurs—affording little to tempt the residonce of man. In Utah and Oregon thoro are hero and thoro beautiful and rich intervals; but tho whole extent of them is small; so that for a distance of ono thousand four hundred milos there is little afforded by the country, or to be afforded by its prospective population moro commercial than aro the mountains and vales of Switzerland. Tho caso with Texas is widely different, which wo can prove in briof terms.

1. From the borders of Louisiana to El Paso, a distance of 780 milos, is through one of tho finest regions of the world. It invites omigration, with tho most powerful attractions; and no State of the Union, unless perhaps Iowa, is settling so fast. In tho five years since 1850, Texas has gained 75 por cent. in population, or 15 por cent. por annum. In the consus of 1860 Texas will probably have 700,000 inhabitants. This region also has coal and water in abundance. Thoso, with fertile soil, fine climate, and materials for manufacturo, combine to give most ample *local resources to a railroad* on tho parallel of the 32d degreo.

2. But, socondly, wo como now to tho "Gadsdon Purchase," through which the road lies for some 450 milos. This, it will be said, is comparatively barron. To some extont this is so; but not so much as is supposed. Water is readily obtained under tho surface, and with irrigation it becomos fertile. But, is agriculturo tho only resource? Far from it. Tho "Gadsdon Purchase," on the other hand, is likely to furnish a largo and productive business to a railroad.—This it will do, by its *mineral resources*, and its commercial advantages. We *know* that both copper and silvor abound thoro. Already a productive copper mine has been oponed on tho western side of the "Purchase," whose products must be shipped through the Colorado, and the Gulf of California. Silver mines in the south-western angle of the "Purchase," were formerly worked by the Mexicans, who wore compolloed to abandon them on account of the Indians and tho total want of security in the revolutionary

stato of that unhappy country. But Indians, insocurity, will disappear before tho strong arm of the Saxon. Those rich minos will be ro-discovered, worked, and open another stream of wealth and riches to the Union. But wo spoke of commercial advantages. Our readers doubtless recollect the fact stated by Major Heintzleman, that the Colorado was navigable for steamboats. Tho commerce of the Gulf of California will thorofore all pass on the Texas Pacific Road, at tho mouth of the Gila, and thus furnish a largo local traffic from that point to the United States.

3. But, thirdly, this is not all. Largo provinces of Mexico aro so near this routo that the commerce of hundreds of thousands of pooplo already settled thoro will also take this route. The States of Sonora, Chihuahua, and Lower California will depend for their internal commerce upon tho Texas Road—and the resources of those rich regions, which to Mexicans and Spaniards have been sealed, will be oponed up to the adventurous ontorpriso and inventive genius of the Anglo-American.

It will be half a century beforo such resources as wo have horo enumerated will exist on the cold plains and dark valleys of the northern routes. Wo readily admit the great advantage, if not necessity, of having a commercial outlet through Pugot's Sound, and we regard that position as commercially ono of tho most important on the continent; yet when we consider the advantages to a railroad, in construction, running, and traffic, it is not to be denied that these are largely in favor of the Texas route.

#### GEOGRAPHICAL MEMOIR.

We devote a largo portion of our space to-day to a paper from James W. Taylor, Esq., the accomplished and gentlemanly Librarian of the Ohio State Library. The substance of the Memoir was embodied in several lectures, delivered before the General Assembly of Ohio, in the Hall of the House of Representatives, during th past winter. These lectures attracted a largo amount of interest in the capitol, and elicited considerable eclat. The map with which these lectures were illustrated, divides up the territories into twenty-nine new embryo states, which, in course of time, would make our Union consist of sixty States. The geographical divisions, and the names given to those divisions, to say the least, are original with Mr. Taylor. The names selected for the various divisions or states, are all derived from the aborigines, and are appropriate, mellow, and full of historic interest.

¶ To-day is the day fixed by Congress for the discussion of the bills relating to the Pacific Railroad question. It is the most important issue of the day, and we trust will be received as such by our national legislators.



## NAVIGABILITY OF THE MISSOURI.

CONTINUED.

The next portion of the river to be considered is that which is included between the rivers Kansas and Nebraska, or Platte; this division of the subject into parts being adopted more for convenience than anything else.

The Missouri, from near the mouth of the Kansas to near the parallel of 40° 38' north latitude, or about the middle of the island of Grand Lebouter, separates the State of Missouri from the Indian territory, and from that point to the mouth of the "Big Sioux," it separates the State of Iowa from the Indian territory.

We passed the mouth of the Kansas at about forty minutes past 4 o'clock, P. M., on the 27th. Fort Leavenworth we passed at about half after 10 o'clock, A. M., on the 28th. This place is beautifully situated upon a commanding eminence, on the right bank of the Missouri. The country to the west of it, for some twenty or thirty miles, to the vast prairies, is an alternation of hills and valleys, of prairies and woodland. The valleys are fertile, and some of them under cultivation. The occurrence of woods here, for many miles back from the river, serves in some degree to show that throughout a great part of its extent the country adjacent to the Missouri would be sufficiently wooded were it not for the annual fires.

We had some difficulty in stemming the current above and below Weston. Not far above that point a marked change took place in the appearance of the river. The water seemed clearer, the current less rapid, and the islands, which were nearly all on the left side, were fewer and of older formation than was the case lower down the river. Both banks, whether low ground or hills, were well wooded; but on the right bank, those prairies which extend to the foot of the mountains were not far off, while on the left the belt of thick woods was of about the same width, being succeeded by an alternation of prairies and woods.

On one occasion we entered, just after we had turned from southwest to west, a long and straight portion of the river. From the lower end of this we could see Independence prairie at some miles off, and which appeared to cross the river from west to east. We halted near this at 9 P. M., and remained until the next morning.

The distance from Weston to St. Joseph is, by land, twenty-eight miles; by water sixty miles. The river is very tortuous between the two points, flowing in its course towards every point of the compass.

Several miles before we reached St. Joseph, the beautiful prairie on which it is situated appeared in view. It was of vast expanse, and covered with a brilliant verdure. Behind it, to the east, were thinly-wooded hills, which appeared to range in a southeast and northwest direction. St. Joseph, a flourishing town of about five thousand inhabitants, was formerly an important, and is now, as I was informed, a minor rendezvous for California and Oregon emigrants, there being a good road from it to Fort Laramie and the South Pass.

As at most of the places on this part of the Missouri where observations could be made, or information obtained, the growth where we halted, opposite St. Joseph, consisted of cotton-wood, elm, ash, box alder, maple, bass-wood, mulberry, dog-wood and oak.

By rough measurement, I found that the

width of the river just above St. Joseph was four hundred and sixty yards, and the velocity of the current three miles per hour; but this appeared much less than that near the left bank, where was the main channel.

On the 30th and 31st we passed the rivers Nodawa, Little Tarkio, Big Tarkio, Big Nemahah, Nishnabotana, and Little Nemahah, which are respectively seventy, eighty, fifty, and forty yards wide at their mouths.

Some of the islands, and in some places the channel of this part of the river do not appear to be subject to those sudden changes which have been described. The Great Nodawa Island, with the channel on its eastern side, and some others, are now about as they were when described by Lewis and Clark. The growth of cotton-wood and willow, which commences as soon as the island is formed, protects it to a great extent from the action of the current.

On the 30th and 31st the river continued in most respects of the same character as heretofore. The soil was observed to be very sandy and poor in some places on the 30th. The quicksand banks, which are occasionally found along this portion of the river, are very destructive to cattle, they being sometimes inextricably mired in them, as they come to the river to water. On the 31st we passed Iowa Landing, where is a ferry, and whence is a road connecting with the emigrant road to Oregon and California.

The river at this place varies in width from four hundred yards to half a mile.

On the 1st June we passed Old Fort Kearney, which is situated on the right bank at the mouth of Table Creek; it was formerly occupied as a military post. Bolly's Point, on the opposite side of the river, is connected by a ferry with Old Fort Kearney, and with the road which leads thence to the west.

This road leads to Fort Kearney, on the Nebraska, and thence to South Pass. It is, I believe, from fifty to seventy miles shorter than the road which leads to those points from Fort Leavenworth.

We found the river very rapid at Bolly's Point. It was observed to be more tortuous than for several previous days.

At Linden Landing, which we passed before coming to Old Fort Kearney, the Nishnabotana river approaches to within one hundred yards of the Missouri, and is there one hundred and twenty yards in width. The Missouri, for some miles above and below Linden Landing, varied in width from seven hundred to one thousand yards.

From this place to near the mouth of the "Big Sioux" may be said to be the most dangerous part of the river for navigation. I was informed that there had been several steamboats lost not far from Linden Landing.

The banks were low here, being destroyed by the current.

On the 2d of June we passed the mouth of the Platte. In uniting with the Missouri it forms a delta, and debouches through three channels; the upper is about three hundred and fifty, the middle two hundred, and the lower channel thirty yards wide.

The delta is composed of sand-bars, which are covered with willow and cotton-wood. It is intersected by numberless sloughs. The valley of the river is about ten miles wide at its mouth, the bluffs which skirt the Missouri beginning to separate from that river and to extend themselves up the Platte, at points about five miles, above and below, from its mouth. As far as the eye could reach in

looking up the river, these bluffs could be seen bordering its valley, and within a short distance of the river. They are known to border the valley of the Platte, at distances from the river varying from a few feet to four miles, to points some distance beyond the fork. A few miles above this point, and between the north and south branches, a dividing ridge commences, and widening to the westward, has its northern and southern slopes to continue at the aforesaid distances, respectively, from the two forks of the river. Its top is very uneven, rising into mountains and peaks to the south, southwest, and west of Fort Laramie.

From its mouth to Fort Laramie the Platte is about seven hundred miles long, and is a less tortuous stream than the Missouri. To the fork its average width is about one mile. The north fork varies in width from three hundred yards to half a mile. The south fork is a little wider, and otherwise partakes more than the other of the character of the river below the confluence. Below the fork, the bed of the stream is occupied with vast quantities of drifting sand, or quick-sand, so that the average depth may not be more than three feet. The velocity of the Platte, during high water, at Fort Laramie, has been found to be about six miles per hour. The difference of level between the mouth and that point is about three thousand five hundred feet, while between the mouth and Fort Union is about one thousand feet. Thus it would appear that the Missouri falls one foot in a mile, and has a velocity of near five miles an hour, while the Platte falls five feet in a mile, and has a velocity of about six miles an hour.

Nearly all the wood to be found on the Platte grows on the numerous islands which occupy its channel; these are generally well timbered with cotton-wood and willow.

That river was low when we passed it, so that very little change was noticed in the appearance of the Missouri above the mouth of the Platte. I was told that in very high water the current of the Missouri appears, so to speak, *cut in two* by the rapid flow of the Platte.

With respect to the agricultural capabilities of the valley of this river, it may be said, in general terms, that the Pawnee Indians, who mostly live on its banks, find but little difficulty in cultivating the Indian corn; that at Fort Kearney, near Grand Island, almost all kinds of vegetables, the Indian corn, and some other species of grain can be produced with success; that from the mouth to the fork the valley abounds with the most nutritious grass, which will support stock in summer, and from which may be procured a great quantity of hay for winter use; and that, for the most part, what has been said as to the cultivation of vegetables and grain, and the growth of grass, will apply to Fort Laramie and vicinity. But all these advantages, I would judge, are less than they would be in other climates, for the reason that in the portion of country under consideration, the vicissitudes of the summer season are great; hail-storms and high winds being of frequent occurrence, and the supply of rain irregular. I would here remark that most of what I have said concerning the Platte is founded on observations made during a journey I performed several years since, to and from Fort Laramie.

From the information I have, I think I am justified in saying that the Platte cannot be availed of for purposes of navigation. The Missouri, near the mouth of the Platte, varies in width from five hundred to a thousand



yards. From that point to the mouth of the Kansas, its general course is south-southeast, and length two hundred and thirty-six miles.

The two ranges of hills which limit the valley of the Missouri continue, above the mouth of the Kansas, to be from seven to fifteen miles distant from each other, the eastern range touching the river at Parkville, Weston, St. Joseph, and Elizabeth, after which it does not approach it until at Sergeant's hill; the western ranges at Fort Leavenworth and Independence prairie, after which it is within three-quarters of a mile of the river to a point five miles below the mouth of the Platte. These hills are from seventy-five to two hundred and fifty feet in height.

It has been remarked that at Fort Leavenworth, and for some miles above that point, both banks of the river are well wooded. The timber on the banks diminishes in quantity from that place to near the mouth of the Platte. Thence northward it may be said that, while the hills are thinly wooded with scrub oak, elm, and ash, and the immediate river banks skirted with a belt of cotton-wood and willow, varying in width from a few hundred yards to two miles, the space between this belt and the foot of the hills consists for the most part of prairies that are level and bare of timber.

What has been said with reference to the occurrence of ponds, sloughs, &c., in the river bottoms, applies to this section of the river, although, I think, not to the same extent as in the former case.

The carboniferous limestone and coal measures form the principal geological formation of this portion of the river.

There is a ferry at Platteville, below the mouth of the Platte, which connects with a road to the west.

It may be well to state here that above St. Joseph our steamboat ceased to travel at night, on account of the increased difficulties of the navigation. This necessity will, I think, be obviated when the dangerous obstructions are removed, and a more thorough knowledge of the river gained. It was found necessary to clean the boilers of the boat every second night, for the reason that, as she stopped every night, there was a great deal of sediment from the muddy water. Ordinarily, steamboats run from St. Louis to St. Joseph without having to stop for that purpose.

[TO BE CONTINUED.]

#### INDIANAPOLIS INDIGNATION MEETING.

The best thing we have seen in reference to the above meeting, is the following from the Logansport *Democratic Pharos*:

"The 'run' of Cincinnati brokers upon the banks of this State, having created quite a 'tempest in a tea-pot,' to-morrow the indignant bankers, and such merchants as are sympathetically inclined, meet in Indianapolis, to regulate the matter. It is unpleasant for bankers to be made to pay debts so soon after contracting them. The good resulting from the meeting will be imaginary, unless the money paid to railroads and landlords at Indianapolis, is deemed a special benefit to the public. Indiana merchants will continue to trade where they can make the best bargains, and brokers will run banks where they can make money by it. Such is the law of trade.

## Opinions of the Press.

From the Ohio State Journal of January 9.

### GEOGRAPHICAL MEMOIR

*Of a District of North America, extending from Latitude 43 deg. 30 min. to 54 deg., and between Lakes Superior and Winnipeg and the Pacific Ocean.*

[A letter from James W. Taylor, of Columbus, Ohio, to William R. Marshall, Esq., Chairman of the Chamber of Commerce, St. Paul, Minnesota.]

SIR: The publication by Congress of the results of recent Pacific Railway Explorations will contribute materially to the public information upon the interior geography of the North American Continent. Gov. Stevens, who was charged with the survey of the route near the forty-seventh and forty-ninth parallels, is first presented, and furnishes a mass of materials for a thorough revision of the map of our Northern frontier. I have just closed a patient review of his observations and estimates, and beg your indulgence as I endeavor to arrange a few thoughts and suggestions which have meanwhile occurred to me.

While thus engaged with the quarto volume already published by the United States Senate, my attention was drawn to a significant paragraph in the Montreal Gazette. The writer denounces what may be characterized as a subtreaty between the Hudson's Bay Company and the Russian authorities, (whether at Sitka or St. Petersburg is not stated,) by which it is stipulated that if no attack or interruption of the British Company occurs, neither shall the Allies attempt the subjugation of the posts in Russian America; and then proceeds to arraign the Hudson Bay Company for systematically closing against permanent settlement the most fertile districts of the British possessions on this continent. The country between Lake Winnipeg and the Pacific Ocean is represented as rich in minerals, affluent in soil, and possessing every requisite for populous and civilized communities—as worthy, in all respects, of a destiny superior to its present sequestered condition. Pursuing the hint of the Montreal writer, I find that his representations are not at all exaggerated—that testimony abounds in every collection of North American travels, fully establishing the immense natural resources of a region extending from the forty-ninth to the fifty-fourth degree of north latitude, and westwardly from Lake Winnipeg to the Pacific Ocean—an area of five degrees of latitude by thirty of longitude.

Then turning to a map of North America, (for our maps of the United States are inadequate for the representation,) I was astonished to observe the immense and fertile area, which, at no remote day, must seek the channels of the Mississippi and the St. Lawrence, by the inevitable egress which St. Paul affords on the one hand, and Superior in a more northern direction. From latitude forty-four to fifty-four, and from longitude ninety-two to one hundred and twelve (west of Greenwich,) or between Lakes Superior and Winnipeg on the east, and the Rock Mountains, there is comprised an area of 631,050 square miles. Extend those lines of latitude to the Pacific in longitude one hundred and twenty-four, and we have a further area of 378,636 square miles, or an aggregate of 1,009,686 square miles—equal in extent to France, Germany, Prussia, Austria, and that portion of Russia which lies south of St. Petersburg and west of Moscow. A district,

ten degrees of latitude wide by thirty-two of longitude in length, would comprise twenty-four States of the size of New York.

But, it may be said, this immense surface is comparatively a desert west of the meridian of ninety-nine, or consists of inaccessible mountains. Not so, however. Take up the map and extend the southern boundary of Minnesota, (which, by the way, is half a degree south of the parallel of forty-four) to the Pacific Ocean. It skirts the northern border of the Great American Desert, or traverses a very narrow segment of it west of the Missouri valley, and along the eastern base of the Black Hills; includes the well watered and fertile basin of the Yellow Stone and Upper Missouri: runs south of the beautiful valleys within the Rocky Mountains, explored and described by Gov. Stevens; and, thence to the Pacific, comprises a region in which the proportion of arable land is fully equal to what exists in the States of New Hampshire, Vermont, New York, Pennsylvania, and Virginia. Of course we are now confining our attention to the territory of the United States and shall defer for the present the consideration of the region between the 49th and 54th degrees of north latitude, and westward of Lake Winnipeg.

I have illustrated the capacity of this belt of country for the support of population, and the organization of communities, by drawing upon a map the obvious boundaries of future States, as these are indicated by the course of rivers and mountains, and confirmed by the explorations of Government and individuals. Will you join me in this attempt to cast the horoscope of the continent west of the present limits of Minnesota—a region apparently designed by Nature, at least so far as the Rocky Mountains, to be closely associated with the future of St. Paul!

But before taking up our westward march, let us dispose of the nascent State of Superior, or Chippewa, or Hiawatha, (whatever should be its proper nomenclature.) Wisconsin will hardly allow its southern boundary to descend below the parallel of forty-six extended west of the Menomonee river of Green Bay and the Montreal river of Lake Superior. As to the western boundary of the projected State, Minnesota will probably consent that it shall ascend the St. Croix to the mouth of Snake river, thence up its west fork to the eastern border of Mille Lake at the 93d meridian of longitude, and so northwardly on that meridian to the international boundary in Rainy Lake, separating in its course the waters of the St. Louis of Lake Superior from the eastern tributaries of the Mississippi. At some future day, perhaps, the boundary of the 49th parallel may be extended from the Lake of the Woods due east to Neepegon Bay on Lake Superior; and when such an annexation occurs, our new State of Superior would be handsomely squared on the north.

Now for the subdivision of Minnesota. The census of 1850 credits you with an area of 141,839 square miles, with the infinitesimal fraction of four hundredths of one inhabitant to the square mile. If you would retain your personal identity, therefore, a limitation of boundaries will not be an unexceptionable measure. You are supposed to have been slightly reduced on the north-east (provided there is acquiescence in the gift to Superior;) and now I propose, for reasons hereafter apparent, to extend your Southern boundary to the meridian of 99, and thereby North to the international boundary. But Minnesota is still too large, although thus shorn on the



West and South-west of a front upon the Missouri river. Divide the immense parallel ogram which remains by the line of 46 north latitude—call the upper half Itasca, retaining the musical designation of Minnesota for the southern moiety, and the areas of the respective States will be 51,430 and 58,722 square miles. Both States will average 400 miles from east to west, while Minnesota would be 150 and Itasca 180 from north to south.

I have assumed that no one has objected to the transfer of the Coteau du Missouri to aid in the formation of a State, which shall include the Missouri and its tributaries, and extend from 43° 30' (the southern line of Minnesota extended west) to latitude 49, and from the proposed western boundary of Minnesota and Itasca, to the meridian of 103. This area of 73,384 square miles might not inappropriately be called Dacotah, since many bands of that aboriginal stock have hitherto frequented and still frequent this portion of the Missouri river. Recent explorations go to prove, that except the extreme eastern and western limit of the proposed State of Dacotah (along the ridge of the Coteau du Missouri and at the base of the Black Hills) this region shares the characteristics of the Missouri bottoms and bluffs, being a productive formation of marl and earthy limestone, well adapted to wheat, barley, rye, and oats, and also bearing fine crops of Indian corn. Capt. Van Vliet, of the United States Army, who passed overland from Fort Pierre to the northwest corner of Iowa, describes the country along the eastern bank of the Missouri, particularly that inhabited by the Yancton Sioux, as being of a most desirable character and of extraordinary fertility.

We are now at the threshold of the Yellow Stone basin, which reaches from the western base of the Black Hills to the Rocky Mountains, including the valleys of the Yellow Stone and its numerous tributaries and other affluents of the Upper Missouri. An intelligent writer in the New York Tribune represents the valleys of the Yellow Stone as spacious, fertile and salubrious.

"The streams," he adds, "are fringed with trees, from whence the valley expands many miles to the mountains. The traveler can almost imagine himself upon the banks of the Danube; for the valley is sprinkled over at long intervals with the cyclopean structures of granite, closely assimilated in appearance, from a distant view, to the stern and solitary castles with which Europe was covered and guarded during the middle ages. But these structures exceed those of Europe in magnitude and grandeur, and the woods and water are disposed with a taste and beauty which the highest art must ever toil after in vain. It is encircled by a rich girdle of heights and mountains, the bases and dark sides of which are obscured in shrubs, and the summits tufted with noble forest trees. And here is to be the seat of a populous and powerful community in the far future."

Gov. Stevens represents the Gates of the Rocky Mountains as in about 110° of longitude. Our western boundary of Dacotah is only in longitude 103, while we have five and a half degrees of latitude at our disposal. Thus is suggested the arrangement of two States, one north of latitude 46, including the Upper Missouri and its tributaries, and another south of that parallel, including the Upper Yellow Stone and all its subordinate valleys—immense States of 68,575 and 73,296 square miles, but we are in the heart of a mighty continent, and can afford to be magnificent. As for a nomenclature, there are Indian designations—Upsaroka, Arrickara, Minnetara, either of which would have a local significance.

At length the immense plains are passed—the Gate of the Mountains reached—our route is among their passes and peaks; and here no topographical testimony is so pertinent as that of Gov. Stevens in his recent report:

"Entering the mountains on the eastern side are the tributaries of Marias, Teton, Sun, Dearborn and Jefferson rivers; the latter one of the principal forks of the Missouri river. On the west the rivers, Clark's fork of the Columbia, Black-foot and Hell Gate forks, together with that branch of Bitter Root river retaining its name, and the tributaries of Snake river, are the principal streams, whose valleys cut the mountains in transverse ranges, and whose sources are separated from the head waters of the Missouri tributaries by ridges one to three miles in width, and rising from five hundred to two thousand feet above the running water on the opposite side of the summit."

Gov. Stevens found the slopes and summits of these ridges covered with excellent timber, and estimates that in the valleys on the western sides of the mountains, and extending no farther west than the Bitter-root range of mountains, (about 114 of longitude) there may be some 6000 square miles of arable land, open grassed land with good soils and already prepared for occupation and settlement; and that, in addition to this amount, there are valleys having good soils and favorable for settlement, which will be cleared in the removal of lumber from them. The faint attempts made by the Indians at cultivating the soil have been attended with good success, and fair returns might be expected of all such crops as are adapted to the Northern States. The pasturage grounds are unsurpassed. The extensive bands of horses owned by the Flathead Indians occupying St. Mary's village, on Bitter Root river, thrive well winter and summer. One hundred horses belonging to the exploration were wintered in this valley and up to the 9th of March, the grass was fine, but little snow had fallen, and the weather was mild. The oxen and cows owned by the half-breeds and Indians obtain good feed and are in fine condition.

"Probably," continues Gov. S. "4,000 square miles of tillable land is to be found immediately on the eastern slopes, and the bottoms of the different streams, retaining their fertility for some distance after leaving the mountains, will considerably increase this amount. There is a marked difference of climate on the two sides, as appears by a comparison of meteorological results of the winter posts established—one at Fort Benton, on the Missouri, and the other near St. Mary's village, on opposite sides of the mountains."

Ten thousand square miles of arable land, traversed by mountain ranges thickly clothed with pine, is a sufficient warrant for a Highland State, extending from the meridian of the Gate of the mountains on the east to the meridian of Flathead Lake on the west, and from the south line of 43° 30' to 49° north latitude. In the heart of the mountains the remotest source of the mighty Missouri has borne since the exploration of Lewis and Clarke in 1804, the illustrious name of Jefferson. We shall find that of Washington applied to a territory on the Pacific coast—let us crown the overlooking summits of the Rocky Mountains with the name already immortalized by association with the Declaration of American Independence.

The western boundary of Jefferson is the meridian of 114. Thence to the Pacific coast is ten degrees of longitude by five and a half of latitude, or nearly 200,000 square miles—ample room and verge enough for four States of the size of Pennsylvania. By drawing a line on the meridian of 119 and at right angles thereto on the parallel of 46, we have the requisite subdivision of the Plain of the Columbia adjacent to the Rocky Mountains; while the river Columbia, in its course from east to west, may continue to separate Oregon from Washington. As for the names of the new States immediately west of the mountains, the geography of the region suggests Wallawalla, Umatilla, Yakima, Okanagan, Kootania, Saptina, Shoshonia, &c.

No one doubts the capacity of Oregon and Washington, within the limits proposed, to sustain the rank of first class States; but

doubts may be entertained of Wallawalla and Umatilla, (or however you may choose to designate the organizations to the eastward.) But on this point hear Stevens. He informs us that the region between 46 and 49 latitude, and 114 and 119 longitude—our formation from the eastern half of Washington territory—is, with a few exceptions, a good grazing country. The Couer d'Alene mountains are a vast mass of limestone, and the valleys on their western slope are rich and inviting. On the Kookoskia there is a fine agricultural and grazing region, and in December one of the exploring party found the grass perfectly green, peas up, and flowers in blossom.

Mr. R. H. Thompson, an Indian agent of the Government, thus describes the country south of the 46th parallel, and between the Rocky and Cascade mountains, on the east and west respectively:

"It may be characterized as mountainous, having the heavy swells of the Rocky, the Blue and the Cascade mountains, the latter two apparently connected by the ridges of the Mutton mountains (said to derive the name from the big horn sheep, which is occasionally seen here) whose course is nearly east and west and therefore at right angles with the general direction of the other ranges. The soil, for the most part, is undoubtedly fertile, and yields throughout a luxuriant growth of highly nutritious grass, for which animals manifest a great fondness. It is commonly called bunch grass. The country, in consequence, is well adapted to the raising of stock; and the Indians have accumulated large herds of horses and cattle. The former is of a very superior breed, to which they are very much attached. Pine, fir, and oak timber covers the uplands—the plains are destitute of timber except cottonwood, willow, hickory, and choke cherry on the banks of the streams; portions of the country are well watered and the alluvion of the streams furnishes a superior soil for gardens, while the hills are well adapted to the cereal grains. The soil yields abundantly with very little labor, and on this account many Indians have commenced farming, producing wheat, corn and potatoes, with many of the culinary vegetables." &c., (See Report Commissioner of Indian Affairs for 1854.)

Ten first class States is a moderate computation for the future organization of the country between the sources of the Mississippi and the mouth of the Columbia; which is unquestionably destined to be the scene of a vast colonization. As for a railway between Lake Superior and Puget's Sound, we must be allowed to doubt whether it can be advantageously constructed in advance of systematic settlement. But it is not my purpose to discuss the Pacific Railway question, except indirectly, by an effort to show the immense natural resources of the zone under consideration. We have considered with sufficient particularity the features and prospects of its southern section, (that below the parallel of 49°) and now I invite your attention to a rapid sketch of the district included between the 49th and 54th degrees of north latitude, and west of Lake Winnipeg.

We will, in the first place, dismiss the Pacific slope with a brief summary of description.

Vancouver's Island will prove a valuable possession to Great Britain—fertile, well timbered, finely diversified by intersecting mountain ranges and extensive prairies, skirted by excellent land locked harbors, with an extensive coal field recently discovered on its northeastern border, rich in fish and furs, and embracing an area of 16,200 square miles, or as large as Vermont and New Hampshire.

Northward of Vancouver's Island the Coast and Cascade ranges intermingle, and trend so near the Pacific as to present a rugged and inhospitable coast, but within the valleys of Frazer's river, the Okanagan and the Upper Columbia, we have the authority of Father De Smet, the well known Catholic Missionary, for a favorable impression of the country. His "Oregon Missions" is a readable volume of Apostolic adventure and exploration; and I can not better illustrate the temperate cli-



mate, picturesque scenery, and natural resources of the wilderness north of our national boundary than by liberal quotations from its pages.

In September, 1845, Father De Smet reached the valley of the Flatbow river in about latitude 49. His route was thence northeast to the source of the Columbia, in latitude 50, and along the base of the Rocky Mountains until by a favorable pass he crossed their dividing ridge and descended into the plains of the Saskatchewan, wintering at Fort Edmonton on the north branch of the Saskatchewan in about latitude 54. During the first part of his journey (his letter is dated September 2, at the ford of Flatbow river) he records his impressions as follows:

"Advancing toward the territory of the Keotenays, we were enchanted by the beautiful and diversified scenery. We sometimes traversed undulatory woods of pine and cedar, from which the light of day is partially excluded. We next entered sombre forests, where, axe in hand, we were forced to cut our way, and wind about to avoid hosts of trees that had been levelled by the autumnal blasts and storms. \* \* We caught a transitory glimpse of many charming spots covered with vegetation as we pursued our winding way near the river wherever it deviated from its natural course."

"An extensive plain at the base of the Portage mountain presents every advantage for the foundation of a city. The mountains surrounding this agreeable site are majestic and picturesque. They forcibly recalled to my memory the Mapocho Mountains that encompass the beautiful Capital of Chili (Santiago). Innumerable little hills, oozing from the mountain's stony bosom, diffuse a transparent haze over the valleys and lower slopes. The fine river des Chutes comes roaring down and crosses the plains before it joins its waters to the McGillivray (or Flatbow), which tranquilly pursues its course. The quarries and forests appear inexhaustible; and having remarked large pieces of coal along the river, I am convinced that this fossil could be abundantly procured. What would this now solitary and desolate land become, under the fostering hand of civilization? Indeed the entire tract of the *Skutzi*, (as the writer terms the united bands of Flatbow and Keotenay Indians, who inhabit the oval district between the Flatbow river, and the upper Columbia) seems awaiting the benign influence of a civilized people. Great quantities of lead are found on the surface of the earth; and from the appearance of its superior quality, we are led to believe there may be some mixture of silver. \* \* After a few days journey we arrived at the Prairie du Tabac, the usual abode of the Keotenays. Their camp is situated in an immense and delightful valley, bounded by two eminences, which, from their gentle and regular declivity, covered with smooth pebbles, appear to have originally bounded an extensive lake. \* \* Thence I journeyed on towards the sources of the Columbia. The country we traversed was highly picturesque and agreeably diversified by beautiful prairies, from which poured forth spicy odors of flower and shrub, and fresh spirit-elating breezes, smiling valleys and lakes, surrounded by hoary and solemn pines, gracefully waving their flexible branches. We also crossed dark Alpine forests, where the sound of the axe has never resounded; they are watered by streams which impetuously rush over savage crags and precipices from the range of mountains on the right. This stupendous chain appears like some impregnable barrier of colossal firmness."

"On the 4th of September I found myself at the source of the Columbia. I contemplated with admiration those rugged and gigantic mountains where the Great River escapes—majestic but impetuous, even at its source. Two small lakes from four to six miles in length, formed by a number of springs and streams are the reservoirs of its first waters. I pitched my tent on the banks of the first fork that brings in its feeble tribute, and which we beheld rushing with impetuosity over the inaccessible rocks that present themselves on the right. \* \* On arriving at the two lakes, I saw them covered with swarms of aquatic birds—coots, ducks, waterfowl, cormorants, bustards, cranes, and swans; whilst beneath the tranquil water lay shoals of salmon in a state of exhaustion. At the entrance of the second lake in a rather shallow and narrow place, I saw them pass in great numbers, cut and mutilated after their long watery pilgrimage among the rapids, cataracts, valleys and falls. They continue this uninterrupted procession during weeks and months. \* \* In the absence of men the grey and black bear, the wolf, the eagle, and vulture assemble in crowds at this season of the year. They fish their prey on the banks of the river, and at the entrance of the lakes;—claws, teeth and bills serving them instead of hooks and darts. Thence when the snow begins to fall, the bears resume their road back to their dens in the thick of the forest, and hollows of the rocks, there to pass the four sad winter months in complete indolence."

"When emigration, accompanied by industry, the arts and sciences, shall have penetrated into the numberless valleys of the Rocky Mountains, the source of the Columbia will prove a very important point. The climate is delightful; the extremes of heat and cold are seldom known. The snow disappears as fast as it falls; the laborious hand that would till these valleys would be repaid a hundred fold. Innumerable herds could graze throughout the year in these meadows, where the sources and streams nurture a perpetual freshness and abundance. These hillocks and declivities of the mountains are generally studded with inexhaustible forests, in which the birch tree, pine of different species, cedar and cypress abound."

"In the plain between the two lakes are beautiful springs

whose waters have reunited and formed a massive rock of soft sandy stone, which has the appearance of an immense congealed or petrified cascade. Their waters are soft and pellucid; and of the same temperature as the milk just drawn from the cow. The description given by Chandler of the famous fountain Pambook Kalesi, on the ancient Hieropolis of Asia Minor in the valley of Meander, and of which Malte Brun makes mention, might be literally applied to the warm springs at the source of the Columbia. The prospect unfolded to our view was so wonderful, that an attempt to give even a faint idea of it would savor of romance, without going beyond the limits of fact. We contemplated with an admiring gaze this vast slope, which, from a distance, had the appearance of chalk, and when nearer, extends like an immense concreted cascade, its undulating surface resembling a body of water suddenly checked or indurated in its rapid course."

"The first lake of the Columbia is two miles and a half distant from the River des Arcs-a-plats, (Flatbow), and receives a portion of its waters during the great spring freshet. They are separated by a bottom land. The advantages Nature seems to have bestowed on the source of the Columbia, will render its geographical position very important at some future day. The magic hand of civilized man would transform it into a terrestrial paradise."

The effect of the moist and mild airs of the Pacific upon the whole district west of the Rocky Mountains, is well illustrated by the foregoing description of Gov. Stevens and Father De Smet, and is also apparent from the climate of Vancouver's Island, where the winter is stormy with heavy rains in November and December; frosts occur on the lowlands in January, but seldom interrupt agriculture; vegetation starts in February, rapidly progressing in March, and fostered by alternate warm showers and sunshine in April and May, and where intense heat and drought are experienced during June, July and August."

But to return to our missionary guide. While crossing the Rocky mountains, he noticed a forest growth of plush, cedar, poplar, pine and birch; and the following animals—the stag, reindeer, roebucks, wild goats, mountain sheep, bears, black and gray, panthers, wolves, "the diminutive mountain hare, six inches high," the "lubberly porcupine," beaver, muskrat, otter, squirrel, marten, fox, weasel, badger, &c.—reaching a point on the eastern slope, in about latitude 51, where we resume our quotations:

"By a steep declivity we entered a rich valley, agreeably diversified by enamelled meadows, magnificent forests and lakes—in which the salmon trout so abound, that in a few minutes we procured sufficient for an excellent repast. The valley is bounded on either side by a succession of picturesque rocks, whose lofty summits, rising in the form of pyramids, lose themselves in the clouds. After a three days' excursion, we reached the River des Arcs or Askow on the 18th of September. \* \* In pursuing our route [apparently northward] the 27th, on one of the branches of the river "a la Biche," (Red Deer on the maps,) we remarked several sulphurous fountains, which furnish great quantities of sulphur, and a coal mine, apparently very abundant."

"There beg the favor of a short digression from my subject. Coal abounds east of the Rocky Mountains, on the borders of the Missouri and Yellowstone, on the Saskatchewan and Athabasca. Saltpetre is found in abundance, and iron is not scarce in many parts of the mountains. I have already spoken of lead in this country of the Keotenays; rock salt is found in powder and very plentiful in the Pay's Serpent."

"The valley [of the Red Deer probably] is picturesque and variegated; flocks of sheep and goats contribute to beautify the scenery. We find many tracks of the bear and buffaloes [and his party soon encountered the latter.] \* \* \* The 30th, we continued our route through the valley, where a rivulet of clear water meanders. It is agreeably diversified with meadows, lakes and forests—the valley widens in proportion as it descends—the rocky banks disappear—the mountains decrease and appear insensibly to commingle with one another. Some are covered with forests, even to their tops, others present cones, elevated ramparts, covered with rich verdure. \* \* \* At length on the 4th of October after having traversed the great chain of mountains nineteen days, we entered the vast plain—the ocean of prairies."

On the evening of the same day, the missionary reached and was hospitably received at the Rocky Mountain House, latitude 53 and longitude 115; and on the 31st of October started for another journey on the plains; but after two weeks absence, was compelled to seek refuge from the approach of winter (now the middle of November) at Edmonton House on the upper Saskatchewan. From this shelter he thus writes in general terms:

"The entire region in the vicinity of the first eastern

chain of the Rocky Mountains serving as their base for thirty or sixty miles, is extremely fertile, abounding in forests, plains, prairies, lakes, streams and mineral springs. The rivers and streams are innumerable, and on every side offer situations favorable for the construction of mills. The northern and southern branches of the Saskatchewan water the district I have traversed for a distance of about three hundred miles. Forests of pine, cypress, thorn, poplar and aspen trees, as well as others of different kinds occupy a large portion of it covering the declivities of the mountains and banks of the rivers."

"These originally, take their rise in the highest chains, whence they issue in every direction like so many veins. The beds and sides of these rivers are pebbly and their course rapid, but as they recede from the mountains they widen, and the currents lose something of their impetuosity. Their waters are usually very clear. In this climate wens are not unfrequent. The country would be capable of supporting a large population, and the soil is favorable for the produce of barley, corn, potatoes, and beans which grow here as well as in the more southern countries."

"Are these vast and innumerable fields of hay forever destined to be consumed by fire or perish in the autumnal snows? How long shall these superb forests be the haunts of wild beasts? And these inexhaustible quarries, these abundant mines of coal, lead, sulphur, iron, copper, and saltpetre—can it be that they are doomed to remain forever inactive? Not so. The day will come when some laboring hand will give them value; a strong, active and enterprising people are destined to fill this spacious void. The wild beasts will, ere long, give place to our domestic animals; flocks and herds will graze in the beautiful meadows that border the numberless mountains, hills, valleys and plains of this extensive region."

Life at Edmonton during the winter season is thus sketched:

"The number of servants, including children, is about eighty. Besides a large garden, a field of potatoes and wheat belonging to the establishment, the lakes, forests and plains of the neighborhood furnish provisions in abundance. On my arrival at the Fort, the ice house contained thirty thousand white fish, each, weighing four pounds, and five hundred buffaloes, the ordinary amount of the winter provisions. Such is the quantity of aquatic birds in the season, that sportsmen often send to the Fort carts full of fowls. Eggs are picked up by thousands in the straw and weeds of the marshes. I visited Lake St. Anne [a missionary station fifty miles northwest from Edmonton.] The surface of this region is flat for the most part, undulating in some places—diversified with forests and meadows, and lakes teeming with fish. In lake St. Anne alone were caught, last autumn, more than seventy thousand white fish, the most delicious of the kind; they are taken with the line at every season of the year."

"Notwithstanding the rigor and duration of the winter in the northern region, the earth in general appears fertile; vegetation is so forward in the spring and summer that potatoes, wheat and barley, together with other vegetables of Canada, come to maturity."

On the 12th of March, Father De Smet started on his return trip, proceeding with sledges drawn by dogs over the snow to Fort Jasper, situated northwest from Edmonton on the Athabasca river, half a degree north of latitude 54. Here occurred the following hunting adventure:

"Provisions becoming scarce at the Fort, at the moment when we had with us a considerable number of Iroquois from the surrounding country, who were resolved to remain until my departure in order to assist at the instructions, we should have found ourselves in an embarrassing situation had not Mr. Fraser came to our relief by proposing that we should leave the Fort and accompany himself and family to the Lake of Islands, where we could subsist partly on fish. As the distance was not great, we accepted the invitation, and set out to the number of fifty-four persons and twenty dogs. I count the latter because we were as much obliged to provide for them as for ourselves. A little note of the game killed by our hunters during the twenty-six days of our abode at this place, will perhaps afford you some interest; at least it will make you acquainted with the animals of the country, and prove that the mountaineers of Athabasca are blessed with good appetites. Animals killed—twelve moose deer, two reindeer, thirty large mountain sheep or big horn, two porcupines, two hundred and ten hares, one beaver, two muskrats, twenty-four bustards, one hundred and fifteen ducks, twenty-one pheasants, one snipe, one eagle, one owl; add to this from thirty to fifty-five white fish every day, and twenty trout."

These extracts furnish a sketch of the eastern slope of the Rocky Mountains and of the adjacent plains. I now propose to quote from Sir George Simpson's "Overland Journey around the World," which furnishes a minute description of a route from the northwest coast of Lake Superior at Fort William, a trading post situated near the mouth of the Kaministiquia river, through the Lake of the Woods and Rainy river, to Fort Garry at the junction of the Assiniboine and the Red river of the North, and thence northwestwardly to Edmonton House, the winter quarters of Father De Smet—a view of the Saskatchewan



district from its southeastern extremity to its northwestern limit, near latitude 54 and longitude 113.

Governor Simpson thus expressed his admiration of the valley of the Kaministiquia and the well known Falls of Kakabeka:

"Out of sight of the main track—the scene being accessible only by a tangled path—the Kaministiquia here taking a sudden turn, leaps into a deep and dark ravine, itself a succession of leaps, while the spectator stands right in front near enough to be covered with the spray. Inferior in volume alone to Niagara, the Kakabeka has the advantage of its far-famed rival in height of fall and wildness of scenery. "The river, during the day's march, passed through forests of elm, oak, pine, birch, &c., being studded with isles not less fertile and lovely than its banks; and many a spot reminded us of the rich and quiet scenery of England. The paths of the numerous portages were spangled with violets, roses, and many other wild flowers, while the currant, the gooseberry, the raspberry, the cherry, and even the vine were abundant. [May 20th is the date.] All this beauty of Nature was imbued, as it were, with life, by the cheerful notes of a variety of birds, and the restless flutter of butterflies of the brightest hues. One cannot pass through this fair valley without feeling that it is destined, sooner or later, to become the happy home of civilized men."

The rainy river, before falling into the Lake of the Woods, is represented in glowing colors:

"From Fort Frances downwards, a stretch of nearly a hundred miles, it is not interrupted by a single impediment; while yet the current is not strong enough materially to retard an ascending traveler. Nor are the banks less favorable to agriculture, than the waters themselves to navigation; resembling, in some measure, those of the Thames near Richmond. From the very brink of the river there rises a gentle slope of green sward, crowned in many places with a plentiful growth of birch, poplar, beech, elm, and oak. It is too much for the eye of philanthropy to discern through the vista of futurity, this noble stream, connecting as it does the fertile shores of two spacious lakes, with crowded steamboats upon its bosom and populous towns on its borders?"

After traversing Lake of the Woods, and the stream which connects it with Lake Winnipeg, the party at length reached Fort Garry, and thence set forth on the 3d of July, 1841, on their march to Edmonton. The scenery of their first day's journey is described as generally a dead level. "On the east, north and south, there was not a mound or a tree to vary the vast expanse of green sward, while to the west were the gleaming bays of the Assiniboine, separated from each other by wooded points of considerable depth." The journal of the next few days mentions successively a rising surface—luxuriant grass—an abundance of flowers such as the rose, the hyacinth and the tiger lily—then tolerably wooded hills with a constant succession of small lakes, some of which were salt, and all abounding in wild fowl—"bands of antelopes"—"considerable inconvenience with regard to the provisions from the heat of the weather"—"a cold rain through one afternoon and night"—"the sight of a red deer and the sounds at night of wolves and foxes—arrival at the Butte aux Chiens, towering with a height of about four hundred feet over a boundless and level prairie, which had evidently been a lake with this dogknoll in the center, and is covered with an alluvial soil of great fertility, strewn with waterworn stones and presenting various aqueous deposits—thence about twenty-five miles of prairie, among several large and beautiful lakes, one of which is represented as having water as briny as the Atlantic, and sometimes these saline lakes are separated from fresh water only by a narrow belt of land—another soaking rain—then "a picturesque country, crossing the end of an extensive lake, whose gently sloping banks of green sward were crowned with thick woods"—closing a journey of six hundred miles in thirteen days with the following picture:

"In this [the latter] part of the country we saw many sorts of birds, geese, loons, pelicans, ducks, cranes, two kinds of snipe, hawks, owls and gulls; but they were all so remarkably shy, that we were constrained to admire them at

a distance. In the afternoon we traversed a beautiful country with lofty hills and long valleys full of sylvan lakes, while the bright green of the surface, as far as the eye could reach, assumed a foreign tinge under an uninterrupted profusion of roses and blue-bells. On the summit of one of these hills we commanded one of the few extensive prospects we had of late enjoyed. One range of heights rose behind another, each becoming fainter as it receded from the eye, till the farthest was blended, in almost undistinguishable confusion, with the clouds, while the softest vales spread a panorama of hanging copses and glittering lakes at our feet."

The travelers had now reached the Bow river, on the south branch of the Saskatchewan, "which," says Simpson, "takes its rise in the Rocky mountains near the international frontier and is of considerable size, without any physical impediment of any moment. \* \* \* At the crossing place the Bow river was about a third of a mile in width, with a strong current, and some twenty miles below, falls into the main Saskatchewan, whence the united streams flow toward Lake Winnipeg, forming at their mouth the Grand Rapids of about three miles in length."

A smart ride of four or five hours from the Bow river through a country very much resembling our English Park, brought the party to Fort Carleton on the Saskatchewan—latitude 53°, longitude about 108. Gov. Simpson speaks of large gardens and fields in the vicinity of the fort producing an abundance of potatoes and other vegetables, but adds that wheat is often destroyed by the frosts of autumn.

"The Saskatchewan," he remarks, "is here upward of a quarter of a mile wide, presenting, as its name implies, a swift current. It is navigable for boats from Rocky Mountain House, in longitude 116, to Lake Winnipeg, upwards of seven hundred miles in a direct line, but by the actual course of the stream, nearly double that distance. Though, above Edmonton, the river is much obstructed by rapids, yet from that fort to Lake Winnipeg, it is descended without a portage alike by boats and canoes, while even on the upward voyage, the only break in the navigation is the Grand Rapid, already mentioned."

There remained a week's journey to Edmonton, and among its incidents were the following: The route on the first day "lay over a hilly country so picturesque in its character that, almost every commanding portion presents the elements of an interesting panorama;"—buffalo soon became very numerous, and, in addition, the party frequently met wolves, badgers, foxes, beavers and antelopes—raspberries, a sort of a cross between the cranberry and black currant, called the serviceberry, and the eyeberry very nearly resembling the strawberry in taste and appearance, were found in abundance—a sharp frost before sunrise, followed by a heavy dew, occurred on the 22d of July—near Edmonton they crossed a vast plain which was covered with a luxuriant crop of the vetch or wild pea, almost as nutritious a food for cattle and horses as oats; while the vicinity of the fort is represented as rich in mineral productions, a seam of coal, ten feet deep, having been traced for a considerable distance along both sides of the river.

We will not follow the Governor of the Hudson Bay Company through the gorges of the Rocky mountains or his subsequent adventures on the Pacific coast. To the narratives of De Smet and Simpson, I append a few observations of other explorers.

Sir Alexander Mackenzie says: "There is not, perhaps, a finer country in the world for the residence of uncivilized men than that which occupies the space between Red River and Lake Superior; fish, venison, fowl and wild rice are in great plenty; the fruits are strawberries, plum, cherries, hazelnut, gooseberries, currants, raspberries, pears," &c.

Lake Winnipeg, extending through three degrees of latitude, 50 to 53, is skirted by the

sugar maple, and surrounded especially on the west by fertile plains. Henry R. Schoolcraft, in a communication to Silliman's Journal of Science, (March, 1855,) refers to recent information of a reliable character, that on the western coast of the Lake of the Woods and south of the national boundary, large deposits of coal exist. If so, a corresponding formation unquestionably exists along the west shores of Lake Winnipeg.

It is well known that at the Selkirk settlement, the soil is of a black mould of considerable depth, which, when first wrought, produces extraordinary crops, as much on some occasions as forty returns of wheat; and even after twenty successive years of cultivation without the relief of manure, or of fallow or of green crop, it still yields from fifteen to twenty-five bushels an acre. The wheat produced is plump and heavy; there are also large quantities of grain of all kinds grown at this settlement, besides beef, mutton, pork, cheese, butter and wool in abundance.\*

Capt. Back, in his Narrative of an Expedition in 1853 to the Arctic Sea, speaks of a large farm house on the river Saskatchewan above latitude 53, with barns and fenced inclosures, amid which were grazing eight or ten cows and three or four horses.

At Cumberland House—latitude 54° north by longitude 102° 20'—Capt. Franklin found a prosperous agriculture—fields of barley, wheat and even of maize.

I have thus compiled, from the few sources within my reach, the materials for an opinion of the natural features and capacities of the Saskatchewan district of North America; and I can best illustrate my own conclusions in the premises, by comparing the foregoing characteristics of geological formation of soil, climate, &c., with a region of the old world, which seems to present their full equivalent. I refer to a similar area of European Russia. Draw a line from St. Petersburg twenty degrees east and another ten degrees south, extending them into the form of a parallelogram, and you have a region whose area corresponds with that between lakes Superior and Winnipeg on one side, and the Rocky Mountains on the west, and extending from latitude 44 to 54. Now my position is that no two sections of the respective continents more closely resemble each other, than do those above delineated. Both are immense plains, developing the silurian, carboniferous, and in some measure a cretaceous geological formation—the Missouri, Mississippi and Saskatchewan may be set off against the Dnieper, the Don and the Volga of Russia; while in respect to climate and productions, compare the facts already presented of the American district, with the following particulars of European Russia.†

It is usual to consider Russia in Europe in four distinct divisions: a polar region including all the country north of latitude 67: a cold region extending from 67 to 57: a temperate region from 57 to 60, and a warm region from 50 to 37. Our continental latitude from 44 to 54 represents the Russian temperate zone from 50 to 57, as well as three degrees of the cold division, namely, to the latitude of St. Petersburg or 60° north.

The temperate region of Russia has a mean annual temperature of from 40 to 50, and includes within it the finest and most populous portion of the empire; though even here the thermometer has a very wide range, the sum-

\* Sir George Simpson's "Overland Journey."

† Compiled from Lippencott's Pronouncing Gazetteer.



mer heat, which suffices to grow melons and similar fruits in the open fields, being often succeeded by very rigorous winters. Even the sea of Azof, much farther south, usually freezes about the beginning of November, and is seldom open before the beginning of April. The oak is seldom found below latitude 61; few fruit trees are found beyond 56, and their regular culture cannot be profitably carried on north of the 53d parallel. In this latitude (we are still speaking of Russia) apples, pears and plums become abundant; and still further south peaches, apricots, &c., flourish. The northern limit of rye is 65, of barley 67, and oats even farther north.

Wheat is cultivated in Norway to Drontheim, latitude 64; in Sweden to latitude 62; in Western Russia to the environs of St. Petersburg, latitude 60° 15'; while in Central Russia the limit of cultivation appears to coincide with the parallel of 58 or 59. It is well understood that the growth of the cerealia and of the most useful vegetables depends chiefly on the intensity and duration of the summer heats, and is comparatively little influenced by the severity of the winter cold or the lowness of the mean temperature of the year. In Russia, as well as in Central America, the summer heats are as remarkable as the winter cold. The northern shore of Lake Huron has the mean summer heat of Bordeaux in Southern France or 70 Fahrenheit, and Cumberland House, on the Saskatchewan, exceeds in this respect Brussels or Paris. It is remarked by Sir John Richardson, (and such also is the analogy of Russian Europe,) that the prairies south of 55 enjoy milder winters than the more eastern districts.

I have no doubt that potatoes and the hardier garden vegetables, oats, rye and barley can be profitably cultivated as far north as 54, in the Saskatchewan district; that wheat, and such fruits as yield cider, are safe as far as 52; and that maize may be cultivated at least to latitude 50; while the country between 44 and 51 is as nearly as possible the counterpart of the temperate zone of European Russia. With the same system of canalage and a reasonable degree of railroad connection, our vast Northern plain can sustain as dense (and with our institutions and land tenures a denser) population than the heart of the Russian Empire.

Its capacity to support life is shown by the variety and abundance of wild animals. Many of these might be domesticated, and would constitute a great resource. Besides innumerable fur-bearing creatures, there are four different kinds of deer: the Caribou, or reindeer, ranges from 50 to 66; the Rocky Mountain goat, whose wool is highly prized in the manufacture of shawls, frequents the high lands from 40 to 60; the bison swarms in the prairies west of longitude 105 and south of latitude 60; and the streams and lakes abound in choice varieties of fish. No region of the globe is more richly endowed with these allies and slaves of the human race.

The rigorous winter climate is no obstacle to the future occupation of these Northern plains. The corresponding district of Russia, with the same climate, is, as already shown, the most populous and flourishing portion of the empire. There is much misapprehension on this subject. Mr. E. Merriam, (a distinguished meteorologist) states in a review of the recent Arctic expeditions, that Nature has qualified man to breathe an atmosphere 120° above zero, or 60 below it, a difference of 180°, without injury to health;

and the doctrine of physicians that great and sudden changes of temperature are injurious to health is disproved by recorded facts.

But there is another aspect of this climatic question, which is not unworthy of consideration. Scotland, Norway and Sweden and even Iceland, is the only portion of the old world, being in a high northern latitude, where civilization has reached the general standard of Christendom; and is it not the case that the hyperborean climate of those countries constitutes a valuable agency in forming the social and domestic character of the people? With them Home becomes a word of vital significance; the family is lifted to the front rank of human institutions; and the national life and literature gain incalculably from household influences. A sound mind in a sound body is another consequence of a stern climate—Nature's obvious compensation for the exposure of those who dwell under the frigid sceptre of the Ice King—within the Arctic clamors of rude Boreas.

Indulge me in a brief recapitulation:

1. Between latitude 43° 30' and 49°, and west of the meridian of St. Paul to the Pacific Ocean, the Great American Desert is reduced to a narrow and insignificant spur along the eastern base of the Black Hills; but in place of its sterile sands and the extreme breadth of the Rocky Mountains, we meet, beyond the well and favorably known area of Minnesota, first, the marly margins of the middle Missouri, southward from its great northern bend; next the fertile plains of the Yellowstone and Upper Missouri; then the favorable passes of the Rocky Mountains with their transverse and beautiful valleys; beyond that barrier, the basin of the Columbia eminently suitable for grazing; and finally the humid and productive border of the vast Pacific—a region destined to be organized into at least ten States, none of them as small as Ohio and several transcending the proportions of Missouri.

2. The population and resources of the communities which must inevitably arise along our national boundary of the 49th parallel, will be the surest guarantee for a railroad between Lake Superior and Puget Sound, although it is highly probable that its extension beyond the Missouri river, must accompany and not entirely precede the systematic settlement along the proposed route.

3. But tributary to that great enterprise, when the conditions for its execution shall be matured, and meanwhile to the river and lake transportation of the United States is the extensive and hitherto unexplored Saskatchewan plain—an area ample for four large States—with a soil of extraordinary fertility, and summers long enough to mature all the hardy cereals and fruits—thronged by fur-bearing animals and those nobler genera which only need to be reclaimed to constitute an immense source of wealth and comfort—skirted and perhaps traversed by coal deposits, compensating for any possible deficiency of forests—in short, a region of health and physical development, which we are not at liberty to doom to sterility and solitude with the analogies of European geography and history so clearly indicating a hardy and populous settlement of this American Scandavia at no distant period of time.

4. To this glimpse, present and prospective, of the geographical zone which clasps the Columbia, the Upper Missouri and Mississippi and the Saskatchewan, we might push the analogy to the physical geography

of the Old World even farther, and show how England, Norway and Upper Germany correspond to Vancouver's Island and the mainland of Washington and Oregon—how ten degrees of European Russia, as already illustrated, find their equivalent east of the Rocky Mountains and north of 44°—while the bleak primary wastes of Labrador and the region of Canada beyond the ameliorating influence of the Lakes and the Gulf Stream is not unlike Siberia; and thus complete the parallel between the two (not three) continents of the Northern hemisphere.

I need not enlarge, my dear sir, upon other reflections suggested by this geographical discussion. Allow me, in conclusion, to congratulate you and your associates in forming and developing the Territory of Minnesota on your identity with those initial measures which must inevitably lead, within a single generation, to a realization of whatever may now seem sanguine and premature in the foregoing outline of the future North of the American Continent. Should you reach the Scriptural maximum of human lives, you can repeat the gratulation of the Trojan hero—All of which I saw, and part of which I was.

I am, sir, very respectfully,

Your obedient servant,

JAMES W. TAYLOR.

WM. R. MARSHALL, Esq.

#### RAILROAD ROUTE FROM INDIANOLA TO EL PASO.

From San Antonio to Rio San Felipe, 160 miles, most of the soil is excellent for agriculture or grazing. Wood is abundant on the banks of the streams. The road, through this extent, crosses numerous streams, some of which, when swollen by rains, are "large rivers." There is, however, sometimes a deficiency of water, particularly on the Rio Seco and Rio Frio. Bituminous coal is said to exist in abundance on the Nueces, 90 miles from San Antonio.

After leaving the San Felipe, a marked change takes place in the face of the country. Before reaching it, in the vicinity of 100° meridian, the surface becomes more rolling and hilly, and less covered with trees; and by the time we reach the San Pedro, on the 101st meridian, it is nearly barren. The valley of the San Pedro varies from a quarter to half a mile in width, and, owing to its vertical sides, it is difficult to approach. Much of the way it is very rough, and the road along it frequently takes the bed of the stream, and is in places submerged by the autumn freshets at least 20 feet. The traveled route usually avoids the lower part of the valley, keeping to the west of it.

After leaving the San Pedro, the first reliable water is 40 miles distant, at Howard's spring, 271 miles from San Antonio. The next at Live Oak creek, 304 miles from San Antonio. After crossing this creek the route follows it to the Pecos, and up this to the crossing. This portion of the Pecos is "narrow and deep, extremely crooked in its course, and rapid in its current. Its waters are turbid and bitter." \* \* \* "Its banks are steep, and of clay. In a course of two hundred and forty (240) miles there are but few places where an animal can approach them for water with safety. Not a tree or bush marks its course."

The road crosses the Pecos 348 miles from San Antonio. It then proceeds west to the Escondido springs, 27 miles; thence to Comanche springs, 19 miles—(clouds of suffoca-



ting dust accompanied the passage of the train;) thence to Leon spring, 10 miles; thence to the Limpid, 37 miles. The country from the Pecos to this point, 93 miles, is exceedingly sterile, and, except a little cane and coarse grass about the springs, and the mezquite, is barren; but it is favorable for grades. At the Limpid we enter the region of the Diabolo mountains, probably a continuation of the Guadalupe range. The country is beautiful, and the mountains, in August, were covered with green grass to their summits. Pine is found on them. The pass is called the Wild Rose Pass.

These mountains do not form a single continuous ridge, but are made up of single conical peaks, intersecting each other so as to form "an impassable barrier," had not some convulsion of nature seemed partly to have opened the pass and canon through which the road runs. The canon is deep and narrow, and in some places not more than 200 yards wide. The last encampment on the plain to the east is at the Painted Camp, 463 miles from San Antonio. We leave the mountains about 40 miles further on, and come upon an elevated plain, with water in very limited quantities. Over this plain the road passes for 60 miles to Eagle springs. From Eagle springs the route leads by a canon through the mountains on the left, and reaches the Rio Grande in a distance of 31 miles; thence to Fort Fillmore, 119 miles; making a total distance from San Antonio of 710 miles, and from Indianola 840 miles.

No reliable practical result could be obtained by the application of the equation of grade to the ascents and descents on this route, according to the profile we have.

The elevations are: at Indianola, 0 feet; at San Antonio, about 700 feet; at leaving of Pecos, 1,900 feet; at summit of Wild Rose Pass, 5,766 feet; at Van Horner's well, 4,146 feet; on the mountains to the west, 4,714 feet; at first reaching the Rio Grande, 3,536 feet; at Fort Fillmore, 3,938 feet. Some of the grades are, for short distances, as high as 400 to 500 feet per mile, but could, no doubt, by proper location, be reduced to practicable ones. No wood could be relied on for railroad purposes, from the San Felipe to the Diabolo mountains, a distance of 330 miles; probably none to the west of these mountains.

—Rep. of Capt. French.

## SOUTHERN PACIFIC,

OR,

Texas Western Railroad Co. Agency. THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14. 106 West Fourth Street Cin.

## RAILROAD MAP

OF THE  
UNITED STATES.

THE latest and best Railroad map of the United States, published for this office, is now ready and for sale at the following prices:

Plain Lithograph.....\$0.50  
Colored Boundaries.....0.75  
Backed with muslin and varnished ready for  
moulding.....1.50  
Mounted.....2.00

Any one enclosing to us the above amount will receive a copy of the map by return mail.

T. WRIGHTSON & CO.,  
Publisher R. R. Record,  
167 Walnut st., Cin., O.

Jan. 31, '55]

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 80 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO.,

## BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

### BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, APRIL 21, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.  
CINCINNATI, --- MONDAY, APRIL 21.

#### THE CONSEQUENCE RESULTING FROM A PACIFIC RAILROAD.

The least time required for a passage from the Pacific to the Atlantic, by any means yet proposed, (by the Panama or any other route,) is *thirty days*. By the Pacific Railroad the time will be but *six days* from the Pacific to New York. This great difference, in time, with the great difference in cost, which results from this difference, will give the entire traffic between the two oceans to the Pacific Railroad. The entire cost made by changing from water to land, on any other route, will prevent successful competition; and cheap as water carriage is, goods cannot be carried round Cape Horn as cheaply as by a direct Railroad. We must look upon the Railroad as having the entire business; and we have only to see what that business is to estimate something of the business of the Railroad.

In the first place, we may here observe, that it is one of the qualities of a railroad to *create* business for itself; and there is scarcely a Railroad in existence which does not do this to some extent. A Pacific Railroad, therefore, passing over 2,000 miles of almost entire new country, must of necessity, from the very beginning, create a business by creating the facilities for settlement, cultivation and commerce. A growth of this kind we may consider one of the inevitable results of such a road; but the amount of this, however, we are unable to estimate. It can hardly be less than 5 per cent. per annum. It may be a great deal more. But, let us see what the original, or first capital in the business of such a road is likely to be. In six years past, the *movement of persons* between California and the Atlantic, has been but a little under 100,000 per annum. In the first years of a Railroad across, on a direct line, 100,000 through passengers may be considered a *minimum*. In all probability the number would be much greater. At 2½ cents a mile, these would bring \$5,000,000; a sum which may be increased to \$6,000,000, by way passengers, emigrants and others, to the intermediate country.

Next, we have the commerce between the United States and China, India, and Japan, and that between the Atlantic and Pacific. The best mode of determining the extent of commerce between the Pacific and the Atlantic is by ascertaining the number of vessels and tonnage. The following is the result, viz:

| Cleared.             |          |          | Entered. |          |
|----------------------|----------|----------|----------|----------|
| Vessels.             | Vessels. | Tonnage. | Vessels. | Tonnage. |
| China.....           | 145      | 117,428  | 107      | 70,815   |
| Sandwich Islands, 82 |          | 21,511   | 89       | 25,009   |
| Peru.....            | 154      | 110,528  | 251      | 169,209  |
| Ecuador.....         | 2        | 1,011    | 1        | 277      |
| Chili.....           | 77       | 31,776   | 41       | 20,157   |
| East Indies.....     | 117      | 85,471   | 85       | 60,119   |
| Australia.....       | 101      | 45,837   | 21       | 6,193    |
| Bolivia.....         | 2        | 657      | —        | —        |
| Aggregate.....       | 681      | 414,219  | 595      | 351,792  |

The freight carried between the Pacific and Atlantic amounts, therefore, to more than *twelve hundred thousand tons*! This enormous amount would be greatly increased by railroad transportation; but, we will suppose, for the purpose of argument, that only *one-half* the present tonnage between the Atlantic and the Pacific were carried on the Railroad, and this was carried at the rate of \$20 per ton, which is not half the rate on our Atlantic railroads. We should have then 600,000 tons, at \$20 per ton, which is \$12,000,000. The transportation of a Pacific Road would, therefore, at the *very beginning*, pay *eighteen millions of dollars per annum*; which will pay the expenses of making the road, and 6 per cent. dividend on a capital of \$150,000. This, however, leaves out of view all the important results to flow from such a road, viz: the rapid settlement of the country and the immense increase of Pacific commerce. It cannot be doubted, by any intelligent, considerate person, that if such a road were actually in existence, that in ten years it would more than double our Pacific commerce. Would not a large part of the Asiatic commerce of Great Britain pass through the United States? The passenger traffic certainly would. This alone would make a great difference. In ten years, we may safely estimate the Pacific commerce over the Railroad to be equal to the whole amount now. The receipts of the road would then be *thirty millions*, and the dividend equal to ten per cent. on the estimated capital. The *data* we have given above for the passengers and tonnage are entirely correct. In the conclusion drawn from them, we are much more likely to have under than over-estimated. In fact, the subject of a Pacific Railroad cannot be looked at with calm and rational examination without the inevitable conclusion that it will prove both a practicable and profitable scheme. We have showed in other articles, that the capital required is entirely within the means of the country, and that it can be made in a comparatively short space of time. Why then should we not have the benefit of it? We must look to our destiny, and adapt means to ends. Our star is still Westward, and Westward we must go.

IRON FOR THE TEXAS WESTERN R. R.—We learn that the Directors have purchased in New York the iron for the first ten miles of this road, and it will be shipped from New Orleans during the present rise in Red River.

#### THE PUBLIC LANDS AND RAILROADS.

We do not believe in *giving away* the public lands, no matter what may be the pretense. Yet that is precisely the way in which Congress has parted with most of the government lands, in the last few years. They have given them away—not, as some believe, to railroads, or to any other public and useful purpose; but simply and only *given* them away. The complete proof of this we find in the following paragraph from the *Baltimore American*, giving a brief synopsis of a portion of the Land Office Report:

"The report of the Commissioner of the Land Office for 1855, affords some figures which, when placed in comparison with the previous years, gives a striking illustration of the extent of the give-away system:

|   | 1854.<br>Acres. | 1855.<br>Acres. |
|---|-----------------|-----------------|
| Sold for cash.....                                    | 7,035,735       | 15,729,524      |
| Located with military scrip<br>and land warrants..... | 3,416,802       | 1,345,580       |
| Swamp lands donated to States.....                    | 11,033,813      | 7,470,746       |
| Donations to roads, &c.....                           | 1,751,562       | 11,558          |
| Total.....  | 23,238,313      | 24,557,409      |

The aggregate quantity of land alienated, by sale or otherwise, during the first quarter of the present fiscal year, was 5,332,000 acres, of which 2,400,000 acres were granted in donations to States and individuals; making for the fifteen months 29,890,079 acres. We have not the official figures for the second quarter, but is it probably not less than 7,000,000 of acres; making for the eighteen months a total of about 36,000,000 acres, and the two remaining quarters for the year ending on the 30th September next, will probably leave the total not below 50,000,000 of acres, an aggregate of territory larger than all the New England States. The large increase in the amount of sales for cash in 1855 over 1854, is explained by the fact that the act reducing the price of lands according to the period they have been in market, to rates varying from one dollar to twelve and a half cents per acre, went into operation in July, 1854. Under that law 10,260,936 acres have been sold for the small sum of \$3,314,996—the average price being 32 cents per acre. The receipts from the public lands during the two years and three months ending September 30, 1855, were \$22,480,000, and during the past twenty years have been over \$106,000,000."

Out of 47,800,000 acres, it seems that 22,700,000 were sold; 4,700,000 given to soldiers, or those who pretended to be so; 18,500,000 given to States; and only 1,760,000 to railroads! That is, *half* the whole amount of public lands disposed of in two years were *given away* without any sort of return or advantage to the government. The provoking part of this matter is that *eighteen millions of acres* of the finest land in the United States were made away with by a positive fraud, under the pretence of being *swamp lands*! The fact is that the lands called "swamp



lands" in the west, are level lands, of the richest soil, heavily timbered, which for want of light and drainage, is kept wet. When these lands are exposed to the sun and air, and the old logs removed, the land becomes dry, and will bring heavy crops. In Ohio we have seen swamps that were once three feet deep in water, made entirely dry when cleared up, and bearing the best crops.

But it is too late now to complain of this swindle. Congress has made way with them, and there is an end of it. What we meant to call attention to, is the very small amount which has gone to aid railroads, when these roads are the great means of improving and giving value to the public lands. In the years 1854 and 1855, there were constructed no less than 6,000 miles of railroad in the United States, of which one-half was in the States of Ohio, Indiana, Illinois, and Wisconsin. These roads contributed more than any or all the causes, to settle and give value to the great bodies of public land in Illinois, Wisconsin, Iowa and Missouri. Yet in three years the sole government contribution to those works was 1,762,000 acres, which at \$1 25 per acre, amounts to \$2,202,500, which makes \$350 per mile, in 6,000 miles, or a little more than 1 per cent. on the cost. If the government really had contributed five times as much to the construction of these works, is there any doubt that they have returned ten times the amount in the increased value of public lands? The receipts for *cash* sales during these years were about \$23,000,000. The ordinary average would have produced \$7,000,000. The increase is \$16,000,000. What caused it? More than half this increase was caused by the new railroads, which carried the citizens of the Atlantic States easily and cheaply to the new States of the West.

The moral from this, we think, is simply this: If the government, looking to its *proprietary interest* in the vast domain west of the Mississippi, would grant, as we have proposed in the case of the Pacific Railroad, one-fourth its whole interest to railroad companies, on condition of making so much railroad, (a mile to so many sections,) and take care not to patent the lands till it is made, they would increase the value of land in the western territories more than ten-fold. In the case of the Pacific Railroad, the grant should be made to a *specific company*, and not to a miscellaneous set of individuals, (as we see proposed in one bill,) and thus aid an organized company in completing such a work.—But such grants might with profit be made to several companies, and thus the national domain be improved.

It is stated that very important silver mines in Sonora, famous in the early history of Mexican mining, have been recently discovered.

## NAVIGABILITY OF THE MISSOURI.

CONTINUED.

The next section of the river to be considered, is that which is included between the mouth of the Platte and Fort Pierre.

The Missouri, from Fort Pierre to the mouth of the Big Sioux, pursues a southeasterly direction; and from the last mentioned point to the mouth of the Platte it pursues a southeasterly direction. The length of this section is about six hundred and thirty-eight miles. The distances I have used are adopted from Nicollet's report, and are different from those in my former report to you, which were the distances as estimated by the captains and pilots on the Missouri.

We reached Bellevue at about 7 o'clock on the evening of the 2d of June, and remained there all night.

Good coal has been found on both banks of the river near this place.

Council Bluff City, situated on the left bank, not far above Bellevue, is the last town seen in ascending the Missouri. It is the ordinary head of steamboat navigation. At present there are but about two steamboats which make regular voyages to Council Bluff City, and about twenty which trade between St. Louis and St. Joseph.

The river is open all the year as high as Booneville; above and to Council Bluff City there is sometimes about a month in winter when it is closed by ice.

On the 3d of June we passed a place called the Mormon Winter Quarters, which is a great rendezvous for the Mormons, prior to their starting for the Great Salt Lake.

There is a ferry here, as also at Bellevue and St. Mary's, Iowa. The road with which they connect leads up the Platte to the fork, and thence up the north fork, uniting with the main Oregon and California route near the Sweetwater, and not crossing the Platte at all.

Most of the wood now used on the boat was cut by the crew. She ran about a mile an hour faster than usual when using wood thus procured, as in that case the best quality was obtained.

Above Council Bluff City I observed many extensive tracts of dead trees standing, and which I thought must have been killed by fires. They were cut for fuel for the boat whenever practicable.

On the 4th of June we passed Old Council Bluffs, a place which was once occupied as a military post. We found the current very rapid at about four o'clock on this day; and, in attempting to proceed, broke part of the boat's machinery, which compelled us to halt for the night. We were obliged to stop alongside of a low prairie on the right bank, where there was nothing to afford a fastening. The flukes of several anchors had to be sunk in the ground in order to effect a mooring. While here, there was much to be dreaded in case of the occurrence of one of those terrible storms which sometimes sweep over this portion of country. At this place we were, for the first time since our departure from St. Louis, troubled with mosquitos. On the night of the 4th the boat was much shaken by the striking of large floating trees against it.

On the 5th we passed a forest on the left bank, which displayed in a very striking manner the ruinous effects of a Missouri river tornado. The largest trees had been torn asunder—some near their roots, some near their middle—and their trunks had been literally

twisted, as if it had been done by a whirlwind.

The soil of the bottoms on this part of the river is very rich.

The Little Sioux river, which we passed on the 5th, is about sixty yards wide at its mouth, and is said to be navigable for small steamboats for ten miles to rapids, these being susceptible of improvement. It drains a country which has not many resources.

On the 6th we halted for wood at an island on the left bank, near which occurs the only settlement to be met with on the river between Council Bluff City and Sergeant's Hill.

Just opposite is a spot called Pelican Island, from the fact of its being a great resort for pelicans. We here first met with this species of fowl. The island received its name from Lewis and Clark, I believe, on account of their having noticed the same fact.

The settlement last mentioned is about eighty miles by land from Council Bluff City, and about forty-five miles from Sergeant's Hill. In the afternoon we passed Wood's Hill, where the bluffs on the right bank are close to the river for three-quarters of a mile. A rapid which occurs here is of about that length. The river was about four hundred yards wide at Wood's Hill, while at the bend, which occurs where the hill above begins to diverge from the river, it was about half a mile wide.

We halted on the night of the 6th on the left bank, just opposite Blackbird's Hill. This is about three hundred feet high, and is surmounted by a mound, which marks the spot where was buried the famous Omaha chief, Blackbird. We found the current very rapid near this hill. I noticed along here many avenues through the woods, each of which must have been formerly a channel of the river.

With references to the changes which are always taking place in the Missouri, and which, being greater from near the Big Sioux to Independence prairie than on any other part of the river, make this the most dangerous section for navigation, I will quote here the observations I made at the time of performing the voyage: "Those changes which are constantly taking place in the bed of the Missouri, and in the direction of its channel, are well known. It would be very desirable to ascertain the general facts in relation to them, such as the periods of time within which they take place in a certain direction, the causes, &c., for upon these might be based the best plan for the improvement at some points of the river, or at any rate the knowledge might render the navigation much more safe than it is now. Besides, of what immense advantage would it be to settlers, who might thus know the portion of the numerous fertile spots open to their occupation not liable to destruction by the river. I have noticed, up to this day, many indications of these changes, in both directions, and it is probable they are constantly taking place at alternate points on the river, to the east and west at once, the destruction of the bank at any point succeeding, and being a consequence of that at a point above. And then, again, these supposed lines across the river are constantly shifting their position and direction, so that the difficulty of arriving at any general conclusions is manifest. I will mention one or two facts bearing on the subject: Lewis and Clark remarked that Blackbird's Hill was the first point above Council Bluff where the hills of the right bank touched the river. At present it is Wood's Hill. Nicollet mentions



that the great bend opposite New Council Bluffs had disappeared subsequently to his voyage, and that the river, which then flowed at the foot of the bluffs, had removed several miles to the east of them; now the bend has reappeared, and the river having returned to the bluffs, has again commenced moving to the east." And, for aught I know, this change may have taken place more than once since Nicollet's voyage.

After passing several more rapids, we reached Sergeant's Hill. The spot is noted as the burial place of Sergeant Floyd, who died there during Lewis and Clark's exploration. Not far above is Floyd's river, a stream with clear water, well-wooded banks, and whose width was about forty-five yards.

After leaving the high bluffs on the left bank we passed the Big Sioux. It is about one hundred yards wide at its mouth, and navigable for steamboats to the rapids, and might be made so for a considerable distance by the expenditure of a small sum for its improvement.

Above the Sioux the current was so rapid that we were several hours in going a few miles.

The channel of the Missouri has, near here, changed within the last few years several miles from south to north.

Coming to another rapid near a prairie on the right bank, resort was made to the expedient, novel for a steamboat, of cordelling; the crew cordelled the boat for about half a mile.

On the 9th we were alongside of Hutan Kupey prairie, which extends up the river on the left bank, from the Big Sioux to the Vermilion. On the right bank the bluffs were nearly all day close to the river.

Near Dixon's Bluff commences the "cretaceous formation" described by Nicollet.

With reference to the phenomenon of the hills emitting smoke as if their interior was burning, which sometimes takes place in this vicinity, I will quote here the observations of Mr. Nicollet: "I believe \* \* \* that these pseudo volcanic phenomena may be compared with those described as occurring in other portions of the globe, under the name of *terrains ardents*; although they are not here accompanied by the emission of flames. They are evidently due to the decomposition by the percolation of atmospheric waters to them, of beds of pyrites, which, reacting on the combustible materials, such as lignites, and other substances of a vegetable nature in their vicinity, give rise to spontaneous combustion; whilst further reactions (well understood by the chemist) upon the lime contained in the clay bed, produce the masses and crystals of selenite that are observed in the lower portions of this interesting deposit." I was informed that a hill was seen emitting smoke in 1852, about eight miles above the Vermilion.

The first lignite seen by us in ascending was on the left bank, not far above Vermilion river. From here it was occasionally met with as far as the mouth of the Poplar; but it was more fully developed between Fort Clark and Fort Berthold than elsewhere on the river.

Hills which appear to have been subjected to the influence of fire, either combustion in their interior, or the burning of the vegetable substances on their surface, are occasionally to be observed on both banks, from near Dixon's bluff to the mouth of the Poplar; but they are particularly to be noticed on the right bank, for some miles below the "Great

Bend." Their soil has an ashy appearance, and they are almost destitute of vegetation. They are called by the traders "Les cotes brulees." The crystals of selenite to be found on their slopes, reflecting very strongly the rays of the sun immediately after rainy weather, have caused them to be called the "Shining Hills." These crystals were found by us, in greater abundance than elsewhere, on the hills on the right bank below the mouth of White river. In the vicinity of the same place it was noticed that some of the streams were impregnated with alum. The Indians, I was informed, powder and use the crystals of selenite for whitening their bead work. In an analogous manner, they avail themselves, for ornamental or useful purposes, of other minerals, and even of plants. They use the roots of some plants for medicines; and of others, as for instance the "pomme de prairie," they gather the pod, fruit, or berry, to quench their thirst when unable to procure water.

Above I have departed somewhat from the main subject, the description of the Missouri below Fort Pierre, for the purpose of stating some characteristics which are common to this and the next section of the river. On the 10th we found the general appearance of the Missouri and its banks not very different from what it was on the 9th. I was informed that past experience shows the navigation is much easier above than below the mouth of the Vermilion.

We passed on the 10th the rivers Vermilion, Little Bow, and James. The first appeared to be about forty-five yards wide at its mouth; the James appeared only twenty yards wide, but is much more above the entrance; it is navigable for canoes, but it is not likely that it can be turned to a useful account as a navigable stream. It is important on account of its extent.

On the 11th, 12th and 13th the Missouri continued of nearly the same character as heretofore. The soil of the bottom was still rich, but was becoming less so as we ascended.

On the 13th we passed Bazil creek, the river L'eau qui Court, and Poucha creek. The first is about seventy-five yards wide at its mouth; the second two hundred and fifty yards; and the third forty yards. The L'eau qui Court takes its rise at a lake about thirty miles from Fort Laramie; it is, when high, navigable for canoes.

The preceding portion of this report was finished before I left Olympia.

In coming from that place to Washington, I lost, as you are aware, most of my notes of the survey of the Missouri.

What follows of the report is founded on such notes as I still have, consisting of the journal of Sergeant Collins, one of the members of the party; a copy, taken in Olympia, of the meteorological observations, and the original records of astronomical observations, and of collections made in the departments of natural history, geology, and botany. From these I think I can state all that is essential for the report. But I shall be unable to furnish you a map made as I have indicated; and I cannot state the depths of the channel of the river, as found by the soundings we took above the mouth of the Big Sioux.

It has been remarked that, during a great part of our voyage, the river appeared tending to approach the western range of bluffs, leaving the greater part of the valley to the east of it. This remark will not apply above the mouth of the Vermilion; above which point

also the bluffs began to become closer to each other. On the 13th we first observed cedar trees growing in small numbers on the banks of the river. As there was moonlight on the night of the 13th we traveled until about 11 o'clock. On the 14th we halted at about half after 5 o'clock in the afternoon at Cedar Island, for the purpose of procuring wood; we remained there all night. The island is about two miles long, and is covered with a thick growth of cedar, intermingled with cottonwood; the soil is tolerably fertile; we found ripe strawberries in abundance. At about 8 o'clock all the party but Sergeant Collins crossed the river to the right bank, for the purpose of taking observations and making collections. We found the bluffs very high, and rising from the river somewhat in the form of steps. In going about a mile and a half from the river, we ascended a succession of hills, each higher than the last; and when we began to return, the bluffs to the west of us still continued to rise. The highest point we reached was about six hundred and seventy-six feet above the river. We returned to the boat at 2 o'clock, on the 15th; we were much delayed until about 9 A. M. by sandbars. Having passed White river on the 16th, and on the 17th the American, we came to the "Great Bend," a remarkable deflection, in which the river suddenly changes its course from east to northwest, then east, and then southwest. The boat halting at the foot of the "Great Bend," I sent a party across the neck of land, with directions to rejoin us when we should reach the opposite side.—They collected some interesting fossils, and reported that the distance across was about two and a half miles; the distance around the bend was about twenty-five miles.

On the 18th, having passed Fort George, a trading post on the right bank, and an island, on which was a farm belonging to Choteau & Co., we came in sight of Fort Pierre at 6 P. M. In approaching the post we took the channel to the west of an island, but found it impossible to pass a sand-bar near its head. Retracing our course, we ascended by the eastern channel, and when within about three miles of the fort a terrific storm compelled us to halt. We reached Fort Pierre at 7 A. M., on the 19th, and remained there until the morning of the 21st.

The Missouri, from the mouth of the Platte to Fort Pierre, varies in width from four hundred to one thousand yards. "Bon Homme" island, which we passed on the 12th, seems to be somewhat exempt from sudden changes, being nearly as I should suppose it was when described by Lewis and Clark.

I noticed eight rapids between the mouth of the Platte and Sergeant's Hill, and thirteen between the last mentioned point and the mouth of the Poplar. A chain of rocks extends across the river at a locality called the "Three Islands," and another at the foot of the "Great Bend."

On the 10th, 11th, 12th, 13th, 14th and 18th, the boat was delayed by storms. She could not proceed with a strong side or head wind, but of course was aided in her progress by a wind from the rear.

On the 13th, 16th, 17th and 18th, it was found very difficult to procure a sufficiency of fuel. Log houses, the remains of abandoned trading posts, were cut to pieces whenever met with, and furnished good, dry wood.—Cedar was also much sought after; but neither kind of fuel was to be obtained in abundance.

The banks of the Missouri might be almost



continuously settled as far up as the mouth of the L'eau qui Court. Above that point, I think about twenty-five per cent. of them possess that advantage. The land for some miles below Fort Pierre appeared to be more rich than that for some distance below the "Great Bend." In ascending from the mouth of the Platte to that point, the valley of the Missouri gradually becomes less fertile.

From the mouth of the Big Sioux to that of the White Earth, the Missouri separates the Territory of Minnesota from the Indian Territory. There is a road from Fort Pierre to Fort Laramie, which is about three hundred and thirty miles long.

[TO BE CONTINUED.]

#### PACIFIC RAILROAD—VIEW OF THE QUESTION IN 1849.

The following extracts are taken from Senate Document 145. They were embodied in a report of Hon. John A. Rockwell from the Select Committee on the subject of a Canal or Railroad between the Atlantic and Pacific Oceans.

The remaining routes that I shall refer to, therefore, are exclusively for railroads. These are, of course, liable to be classed under the same category of *mixed communications*, to which I have already indicated the serious commercial objections. Nevertheless, here such objections apply only in kind, not in degree. For these railroad lines form, in their length, position and means of access at either end, such important features in traversing the globe as entitle them to the rank of integral, at least independent systems; and their claim in this respect is still farther maintained by the functions which they would perform towards our internal commerce, to which all the preceding routes hold a very different relation. Constructions along all or any of these routes would be, it must be remembered, *external* improvements; it is only for those that lie in our own territory that the name of *internal* improvement can be claimed. The first of these routes, and one which I believe is now presented in any detail for the first time, would commence at St. Louis on the Missouri, or, for the moment, at Independence on the same river; and thence pursue a line in general identical with the Santa Fe trail, along the heads of the Osage and the Neosho, the valley of the Arkansas in part, and the upper waters of the Cimarron and two Canadians, by or through the town of Santa Fe to the Rio Grande del Norte or River of Texas; thence down this river, to where the Sierra Madre is pierced by the sources of the Gila, and down the valley of this last to the head of the Gulf of California, and so over to San Diego; on the Pacific, with an extension hereafter, if necessary, along the coast (or rather at the foot of the coast mountains,) to San Francisco. The distance along this route, as measured by an odometer along the marches of exploring parties of the United States, (though there is no doubt but that they could be materially shortened,) are as under:

|  | Equatorial miles. | English miles. |
|--|-------------------|----------------|
| From San Diego to Santa Fe, . . .            | 900               | 1,043          |
| Santa Fe to Independence, . . .              | 600               | 765            |
| Aggregate, . . .                             | 2,500             | 1,808          |
| To which add:                                |                   |                |
| From Independence to St. Louis, (est.) . . . | 217               | 251            |
| St. Louis to Wheeling, . . .                 | 496               | 575            |
| Wheeling to Cumberland, . . .                | 177               | 205            |
| Cumberland to New York, . . .                | 312               | 363            |
|  | 2,702             | 3,202          |

The distance from sea to sea, then, by this route, may be taken at 2,700 equatorial, or 3,200 English miles, which is just about *one-fourth* of the distance, rendered possible in its employment, as a new road from Europe to China, and about *one-fifth* of the length of voyage now necessary

by the Cape of Good Hope. It can now be better understood what was said just now as to this continental route forming, by its entirely new relations to commerce, an independent part of the circumnavigation of the globe, if not an integral system of itself. And its importance can be easily appreciated when we see that, in reducing the distance for Indo-European commerce to nearly two-thirds of what is possible at present, it does much more than can be claimed for any of the other routes; while so far as time of transit is concerned, it defies all competition. But I shall take up these considerations, which belong to the policy of the question, hereafter.

Returning, then, to the special route between Independence and the Pacific, the culminating point of the line near Santa Fe is but 7,047 feet above tide, by barometric measurement; which however cannot be relied on nearer than one per cent. of the given altitudes without more correction than, as it appears, the observations hitherto taken have given elements for. But the numbers, with their maximum correction even, would not materially vary the results. I have taken the pains to go over, station by station, the heights and distances which have been given by the different observers, Emory, Fremont and Wislizenus; and I am thus enabled to present the following synopsis of grades, making no allowances for sinuosities, by which it is easy to see they would be proportionably, and in some points, necessarily and greatly reduced. I have been obliged to make an adjustment of nine miles in the following first class, on account of an error in the printed document, which I did not at first observe, nor until after I had completed the most laborious part of the comparison. There will probably be, then, the following classes of grades and distances along the whole line:

|   | Ascending. | Descending.       |
|---|------------|-------------------|
| Between 0 and 26.4 feet per mile, . . . | 564        | 913 Eng. miles.   |
| 26.4 and 52.8 " " " " " "               | 148        | 97 "              |
| 52.8 " 79.2 " " " " "                   | 43         | 24 "              |
| 81 " 92.2 respectively " " " "          | 4          | 5 "               |
| 113.....                                | 10         | 0 "               |
|   | 769        | 1,039 Eng. miles. |

The distances, ascending and descending, balance one another so nearly, (the latter exceeding only by three per cent. the former,) when duly corrected for the classes to which they respectively belong, that there is no occasion for entering into the details of rise and fall; but the culminating point at Santa Fe may be taken as the average height to which freights will have to be lifted, and the distances equated accordingly. We are warranted, then, by the above statement to conclude that there are no difficulties in the way, so far as grades are concerned. And although one part (which, however, it would appear from the topography of the maps, that have been published, is not necessarily to be occupied in reaching the Pacific from the head of the Bay of California) does reach a limit in rise that would render an assistant engine necessary for full loads on other parts of the road; all these other parts are within, and four-fifths far within, the ratio of rise and fall that has been habitual in such constructions. In point of fact, the average grade over the whole route is but 8.1 feet per mile English, ascending and descending; a deviation from a level which hardly affects the adhesion of a locomotive engine. As to the remaining 1,200 miles to connect with the Atlantic, their rise and fall is within the absolute height of the culminating point at Santa Fe; so that this particular does not require further discussion. Of these 1,200 miles, 312 are already done from New York to Cumberland, in Maryland; 177 miles more to Wheeling, are at this moment being prepared for contract; and the remaining 513 miles, which have been long since demanded and planned by the necessities of our internal commerce, will shortly exist without any connection as is here proposed, and need only a reasonable

certainly of such connection, to be taken up and executed at once by private enterprise. In respect to the harbor at the western terminus, the inconveniences are much less than in the other instances which I have had occasion to mention. A depth of 20 feet at low water, in a bay of some four or five miles wide with secure anchorage and perfect security from winds in any direction, make San Diego one of the best harbors on the whole Pacific coast—"preferable in the opinion of some navy officers, even to that of San Francisco."

The importance of the San Diego railroad, then, and its probable efficiency above all other routes that have been proposed, upon the commerce, both foreign and domestic, of the United States, have, it seems to me, been demonstrated in a light sufficiently clear by what has been said. It only remains now to mention one or two topics intimately connected with the subject.

The first of these is its influence in the proper administration of our government which, without some such adjunct, extends itself but in form beyond the Rio Grande, and grows obsolete before reaching the meridian of Santa Fe. Farther west than that, by nearly 800 miles, our territory extends; and on the shores of the Pacific, we have a line of sea-coast of 1,200 miles. All this is, at least, to be defended; and for defence, forewarning is forearming. We must, necessarily, keep up an uninterrupted and speedy means of intercourse. How far these conditions of intercourse are obtained by the tedious voyage round Cape Horn, or even by the proposed improvement of some one or other of the isthmus routes through a foreign and, probably at some time, inimical territory, I shall not stop to inquire; it is plain that either four months or forty days in the transportation of munitions and troops after the receipt of advices here, (which could not be brought, even by regular relays of overland express riders day and night and by telegraph, under ten days,) leave the territory there and its inhabitants entirely without defence, either against foreign aggressors or barbaric neighbors. The construction of a railroad to San Diego would place this particular in quite another aspect. Accompanied, as such a line would have to be for part of its own police by a system of telegraph wires, news could come from there and replies return in every day; while, in case of need, from all our Atlantic board, forces and supplies in unlimited amount could be transmitted in four days. Ordinary travel from New York would accomplish the journey in six.

Considered in another light, such a road is invested with a still deeper interest. Three thousand miles and more now interpose between the extremities of our territory, and separate citizens of the same Republic; some of whom are watching the current of the St. Lawrence, while others are waiting for the tides of the Pacific. It is impossible but that such remoteness of space and association will, unremedied, leave room for the gravitating tendency of social, like inorganic, masses to fall apart. Such a connection as I propose is the only remedy against such a disaster; and a line like this will be a bond of union stronger, in a moral sense, than the iron material with which it is physically laid.

Nor is it likely that these benefits, so striking and so pervading, will be obtained at any material annual charge to the nation, even if the very enterprise does not turn to be, at ordinary charges, lucrative. I do not think that the tonnage passing over the road in the first year after its completion is extravagantly estimated at 100,000 tons through; which, at the usual railroad freights of 3 cents per ton per mile, would be upwards of \$4,000,000. And if the reports which we are hearing of Upper California are half true only, and if the deposits of



precious metal there do not belie the hitherto received geological habitudes of such formations seven years hence this El Dorado of the West will be only in its prime, and the field for adventure and success will be but more ample and more assured. And when this begins to be narrower or uncertain, there is, below, the rich mining district of Sonora, whose wealth has hitherto been shut up by the marauding Apaches. In this respect, San Diego will not improbably turn out to be nearly the central point of a great auriferous region, whose yield will once more repeat the drama of the sixteenth century, and roll the current of the precious metals, which is now setting eastward from the slopes of the Ural, back again from the west. I do not suppose, therefore, in view of all this, and of the existing current of travel over our present roads, 150,000 persons per annum would be too high an estimate for the probable travel over this road. The fares from this, at the habitual charge, would be rather more than \$4,000,000; and as, conformably to experience on a reasonably well managed road, one-half of the gross receipts may be relied on as net profits, we would thus have a clear revenue of more than 6 per cent. per annum on the whole investment. I have adduced these numerical estimates in order to show that, as far as can be conjectured, the probabilities are rather in favor of the enterprise not resulting in any sunken capital.

Finally, in whatever light we regard this proposed road—whether in the lowest sense of mere lucre to a party possessing sufficient wealth to undertake and complete the enterprise; or in a sense a little higher, of its being an instrument to facilitate and expand our internal and external commerce, and to influence even the trade of the world; or in an aspect more elevated, of a means for performing a duty in defending our own citizens and their possessions, and in hastening the peopling and civilizing of our territories; or in a phase, the loftiest yet, of a ligament potent in holding together our Union as a nation, and in prolonging and perpetuating the duration of a republic, the freest and happiest, in spite of local and accidental frictions, that the world has known—in each and all of these senses, it commends itself to prompt consideration and execution.

Baltimore, Feb. 6, 1849.

#### COAL ON THE PACIFIC.

From a private letter just received from Jas. W. Robinson, Esq., President of the San Diego and Gila River Railroad Company, dated at San Diego, March 4, we make the following extracts:

"We have memorialized Congress to grant us land to build our road from this city to the junction of the Gila and Colorado Rivers.

"This is our State boundary, and we could not become a chartered Company beyond the State limits, under a general railroad law of this state, and we have urged Congress in our memorial to make suitable provision to construct the road from the mouth of the Gila to El Paso, a distance of only 573 miles according to the survey of Lt. Williamson, U. S. Topographical Engineer, and we solicit your aid in Congress to pass these measures.

"A few days ago a Coal Mining Company of which I am President, found a five foot vein of good coal on the ocean shore, one mile from our port, and other companies are digging and no doubt of getting a good supply—so fuel is here, cheap, plenty and good."

## Opinions of the Press.

From the Nashville Patriot.

#### SOUTHERN PACIFIC RAILROAD.

This great enterprise appears already to have aroused a wide extended interest. And well it might, for it is one of the most magnificent and important projects of the age—a work promising untold advantages in a commercial point of view, and, politically considered, become an absolute necessity whether in view of the defence and preservation of our Pacific coast against foreign invasion, or the maintaining of that splendid but remote scope of country as an integral portion of the Union. It is evident that in case of war with any great maritime power, it would at present be next to impossible to protect California and Oregon, while it is certain the attempt to do it would cost our government treble or quadruple the amount required to construct a railroad complete from the banks of the Mississippi to the bay of San Diego, or San Francisco. It is almost certain that without such bond of intercommunication, uniting Oregon and California to the older States by the common ties of sympathy and interest, those remote, enterprising and restless territories so widely isolated geographically, will ere long conceive themselves as widely isolated politically, and yielding to the impulses of interest and ambition, sever their connection with the mother country.

But I presume the need and importance of a railroad to the Pacific will hardly be questioned. Its practicability, its remunerative benefits relative to the cost of construction, and the proper management of the work by its officers, are matters more calculated to suggest doubts as to final success. It is, indeed, an Herculean task, and the magnitude of the undertaking; nay, even the stupendous advantages promised if once completed, appal the imagination, and hope recoils—it is *too great*, too good to be ever accomplished! A few years ago, had the innumerable lines of railroad that now track our country, been at once pressed upon the mind, the conception would have been equally overwhelming. The number of miles of railroad in actual use at the present time in the United States is upwards of 23,000. The State Illinois alone, not long since a wilderness, has now 2,500 miles of railroad, all but sixty miles of which have been constructed within the last six years. The length of the proposed Southern road from the navigable waters of the Mississippi along the 32nd parallel westward to the harbors of the Pacific, is 1,620 miles. The practicability of this route has been demonstrated by careful surveys, while, besides being a considerable shorter, it has decided advantages over the only two Northern routes that are not regarded impracticable, being exempt from the formidable winter storms and snows that prevail in the higher latitudes, &c.

The cost of the entire route, according to the estimate of Col. Gray, United States Engineer, will be about \$44,500,000, or between \$28,000 and \$29,000 per mile, which is considerably less than the average cost per mile of the roads in the Eastern and Middle States, though greater than that of those in the southern and western. Col. Gray estimates the net revenue of the road when completed, at \$9,106,000, or 24 per cent on the original cost. He appears, however, to have been quite too cautious in the calcula-

tion. Mr. Curtis, of Iowa, in an article in the *National Intelligencer*, wherein he recommends the middle or Platte Valley route, on the score of its being more central, but without assigning more valid reasons for his preference; nor, indeed, pretending to meet the more obvious objections to it, sums up the probable revenue of the road, based upon the present annual transit of persons and freight between New York and California, which (since railroads generally increase business from five to ten fold,) he assumes will be at least doubled, amounting in the gross income to \$113,221,896, from which, deducting 50 per cent for cost of running, leaves \$56,610,948, as the net annual proceeds of the road.

But we need not stop to detail estimates, which at best can only be approximative. Nor is it necessary. No one who appreciates the vast extent of trade and intercourse that a railroad would at once open, not only between our Pacific coast and the States on the Atlantic slope and in the Mississippi valley, but between the Western and Eastern worlds, the marts of Eastern Asia, China, the Indies, Australia, and the Islands of the Pacific, together with the wide-extended western coast of South America, can, for a moment doubt that the facilities of a railroad once in operation to the Pacific would secure an immense revenue.

In another paper I will speak of the likelihood of the construction of such a road, and of the means and application now in operation towards its prosecution.

From the New York Express.

#### THE PACIFIC RAILROAD—WILL IT PROVE A PROFITABLE COMMERCIAL SPECULATION.

The necessity and importance of a railroad to the Pacific, is admitted by all persons; for with an internal communication with our Western border intercourse could not be intercepted in case of a war with any European power, as it might now be done; and it becomes a momentous question, whether it is not of paramount importance in that view—admitting it to be an enterprise that would not yield a profit, but which we do not by any means. By the report of the Secretary of War, made of the surveys undertaken under the act of Congress of March, 1853, the route by the 32d parallel appears perfectly feasible, and the report of the survey of Col. Gray, of the same route, confirms the opinion. It would appear beyond controversy, that this is not only feasible, but could be made profitable.

The *Evening Post* of the 12th inst., has an article in opposition to the improvement, but its basis is entirely at variance with facts. After admitting the effect of Railroads in enhancing the value of lands through which they pass, in facilitating transportation, and the immense benefit of familiarizing the inhabitants of remote sections of country with each other, he proceeds to argue that railroad enterprises are not remunerative,—placing his data on the introduction of the system, and the money necessarily wasted on an infant enterprise, which is reduced to a perfect system, and estimates can be made perfect and reliable which were but guess work twenty years back. He then proceeds to say, that the Pacific road would be dependent on its termini for support, and have no local trade on either route. This is untrue. The route on the 32nd parallel commences with the Texas Western Company at the western terminus of the Vicks-



burg and Shreveport road, which is the end of a continuous line of road (built and under contract) from Savannah and the eastern cities, along this parallel. This eastern terminus is in Harrison county—a county with 517 cultivated farms, and a crop of 40,000 bales of cotton—and continues, in the language of the surveyor who located the route, as follows: "The country from Marshall to Trinity river is a little undulating, well-watered and heavy timbered, the soil productive and good, passing through five counties, with an aggregate population of 4,800 persons with real and personal estate to the value of \$22,000,000; well timbered and suitable for railroad building, with an over-abundance of coal on the line in the vicinity of the Brazos river—the country is fast filling up."

The writer not only says there is an entire absence of local travel, but the nature of the country such that there never will be.

This is untrue. To the Brazos from the commencement the distance is about 210 miles, and there coal is found in abundance, notwithstanding the writer says no coal is to be found on either route. Thence it is over 500 miles to the Rio Grande, about 1000 miles to the waters of the Gulf of California, and 1300 to San Diego, one of the finest harbors in the world. Now at the writer's own estimate of transportation, which is 50 per cent. too much, we start with coal at the Brazos at \$2 per ton, and land it in San Diego at \$28 per ton, and at the true estimate of transport, one cent, we have it at \$15 at San Diego, about \$7.50 to the Rio Grande, and \$12 at the navigable waters of the Gulf of California. At present it costs from \$20 to \$40 per ton freight via the Cape.

Again, with regard to local trade, at the Rio Grande you strike a wealthy and thickly populated country, whose capital is Chihuahua, with a population of 160,000, exclusive of Indians, that now trade by wagons over a route of 1,300 miles to Independence. This trade is stated by Captain Pope to be yearly \$6,000,000. On this whole route, 783 miles to El Paso, there is but some 120 miles of uncultivable land—being the southern end of the Llano Estacado, which appears by Col. Gray's report not to be an arid plain, but interspersed with vast fields of grazing lands, but no timber and little water. The government officers are now boring for water,—and the estimated cost of a first class road, fully stocked for this division, 783 miles, is under twenty millions of dollars. From El Paso to the junction of the Gila and Colorado rivers, 578 miles, through a country sparsely settled, estimated to cost \$16,200,000.—Thence to San Diego, 260 miles, it would cost \$8,500,000,—making a total of 1621 miles, estimated cost by Col. Gray, in his report to the Texas W. Co., \$44,470,674. This report of the practicability of the route is fully corroborated by those of Capt. Pope, Lieut. Park, Major Emory and Lieut. Williamson. All this, the writer infers, cannot be done,—or if done, cannot pay. We have shown his fallacy on this coal estimate, and in support of our estimate of one cent per mile for a ton of coals, we refer to Hunt's Merchants' Magazine for September. His estimate of passengers is equally fallacious. He makes the arrivals and departures of passengers at San Francisco, last year, 49,191; whereas, by reference to Hunt's Magazine for April last, we perceive it to be 69,053. He says the total number of arrivals of vessels at San Francisco in 1854, was 280 with 261,567 tons merchandize; whereas, in

1853, there were 443 arrivals, with 423,230 tons; and it would scarcely fall off 50 per cent. Now, the question is, will this road pay? We confidently assert that it can be built for less money per mile, than any road commenced ten years since. A correspondent furnishes us the following estimate for building and working the road:—

"Suppose the cost to San Diego to be 50,000,000, the Company will receive from Texas 16 sections of land per mile, making, for 783 miles, 8,017,920 acres, at \$5 per acre, which would be about \$40,000,000. In estimating \$5, we put it at its smallest value when the road is built—not its value without a road—and our estimate is low: the Illinois Central lands having averaged \$10.40 for land that had been long in market, before the road was built, at the Government price of \$1.25, without sale. Deducting the value of the lands, the road then costs \$10,000,000. Its income would be (for the facility increases travel a hundred fold, and settles the country as it progresses):

|   |                    |
|---|--------------------|
| 100 first class Passengers to and fro at \$100.....                     | \$10,000           |
| 100 2d do do do do do 50.....   | 5,000              |
| 100 way do do do do do 20.....  | 2,000              |
|   | <hr/> \$17,000     |
| For 312 days.....   | \$5,304,000        |
| Transportation of specie from California: 60,000,000 at 2 per cent..... | 1,200,000          |
| 40,000,000 from Australia at 2 per cent.....                            | 800,000            |
| 30,000 tons of freight at \$60.....                                     | 1,800,000          |
| 30,000 tons of way freight at \$30.....                                 | 900,000            |
| For carrying mail daily, \$600 per mile, 1,621 miles.....               | 972,600            |
| Transportation of troops and supplies.....                              | 600,000            |
|   | <hr/> \$11,576,000 |
| Expense of maintaining and working road..                               | 5,500,000          |
|   | <hr/> \$6,076,000  |

Net profit.....\$6,076,000  
Being 60 per cent. on the balance of cost if the lands sell at \$5 per acre, and this without aid from Congress or California. In support of these estimates, we calculate a passenger will take this route at a cost of \$50 to the Eastern terminus, \$100 to the Western, thence \$25 to San Francisco, in preference to \$300 by the shortest Isthmus route, say 25 days, whereas by this he can easily go through in seven days. The second class passenger will do the same, as he thereby saves his time, which to him is money.

The gold must take this route, for 15 days saved in interest on \$100,000,000 of gold is \$291,000, and the same argument holds good with the freight—in fact, from the commerce between the Atlantic and Pacific could be saved enough in the items of insurance, time to the laborer, interest, and wear and tear, in one year to build the whole road. The data for these statements can be found in Colonel Gray's Report, which can be obtained at the office of the Texas Western Co. We have recently learned that Messrs. Brown, the contractors, have extended their contract to build the whole length to El Paso—and have already commenced, having a large force at work in Harrison county. California will not be idle, and an extension to San Francisco will be built fully in time to meet the road from the east. We will have nothing to fear from European powers when this road is finished.

PENS, PENCILS AND MUCILAGE.—These are three things that are exceedingly useful on every desk. And we can say from experience that APPLIGATE & Co., of this city, keep an excellent assortment. We should be very unwilling to return to the days of wafers, after using their Mucilage.

## WATER IN THE DESERT

An Expedition, under the command of Captain John, Pope U. S. Topographical Engineers, was sent out in February last, under instructions from the War Department, for the purpose of "Testing the practicability of obtaining water on the Llano Estacado by means of Artesian wells. The Llano Estacado or Staked Plain, is a strip of country entirely without water, lying on the Eastern slope of the Rocky Mountains, about five hundred miles long and from one hundred to two hundred miles broad, and extending from the parallel of 31° 30' to that of 36° N. Lat. The route of the proposed Pacific Railroad along the 32d parallel, which, after a careful examination of the results of the surveys lately made across the plains, has been pronounced by the Secretary of War to be the most favorable, and also the route for the best waggon road to the Pacific, would pass directly across the Llano Estacado if a sufficient supply of water could be obtained. The distance on the proposed route across the Llano Estacado is 125 miles, or from the head waters of the Colorado river to the Pecos river at the mouth of Delaware Creek; and it is on this line that the party under Captain Pope has been successfully engaged during the past summer.

Captain Pope and party, with an escort of a Company of the 5th Infantry commanded by Captain Stevenson, U. S. Army, left San Antonio about the middle of April, and, after a successful march, arrived at the mouth of Delaware Creek in the latter part of May. Captain Pope determined to encamp here while he selected a site for the Artesian well on the Llano Estacado about fifteen miles from the river and some 400 feet above its bed, a distance which was convenient for the daily supply of water for the use of the hands employed at the well. On the 1st of June the well was commenced; in about three weeks, boring through soft sandstone and marl to a depth of 360 feet, a stream of water was struck which immediately rose seventy feet, or within 290 feet of the surface; a height which it has constantly maintained for several months. Thus the question was virtually settled as to the "practicability of obtaining water by means of Artesian Wells," but it was thought expedient to continue the boring in the hope of finding a more copious supply. The water causing the sandstone and marl to disintegrate and form a *debris* at the bottom of the well, materially impeded the progress of the work, and it became necessary to insert copper tubing. By the last of August, however, they had bored to a depth of 570 feet, and struck a stratum of hard sandstone, on which the lower end of the tube rested, and through which the boring was continued. Passing this hard sandstone "coal blossom" and other indications of a coal measure were found, until, at a depth of about 640 feet, a copious stream of water was struck, which soon rose to within some 250 feet from the surface, and was still rapidly rising, when the substance below the bottom of the tubing commenced disintegrating, and the *debris* soon cut off the supply of water. It was found impossible to keep the well freed of this *debris* by pumping, and to continue the boring successfully, involved the necessity of sending to New Orleans for an additional supply of tubing, although four times the amount recommended by experienced Artesian Engineers had been originally brought. Captain Pope, considering his mission successfully accomplished, has broken up his camp, and is expected at Fort



Fillmore early in October. While at the camp on Delaware Creek, full sets of astronomical, geological, magnetical, and meteorological observations were made by Captain Pope and his corps of assistants, besides large and valuable collections of natural history and botanical specimens.

Three or four wells judiciously located, and a line of posts on the road, would give the emigrant advantages of water and supplies at convenient distances, and protection from the Indians, which are not enjoyed by any route across the Plains; while the coal, which it is thought will be found underlying the whole plain, will prove invaluable in a country so destitute of wood.—*N. Y. Courier and Enquirer*.

#### A PACIFIC RAILROAD.

Amid the discord of rival political parties the business and commercial interests of the country must not be forgotten. There are great and important principles to be contended for in the science and practice of Government; but there are equally important facts, the truth of which no one can deny, that demand constant attention. The one now most prominently before us and that especially concerns the people of the West, is a Pacific Railroad. We say a Pacific Railroad, not because we believe that we shall finally have but one of these great peace makers, wealth makers, and inland fortresses, but because there must undoubtedly be a *first*. The distance from the mouth of the Rio Grande to the shores of Lake Superior, and from San Diego to Puget's Sound, is too vast to remain unspanned by a single route of travel.

We say every day that this is a great country; but no one except Kit Carson, and other brave, hardy explorers, know it in all its vastness. The California emigrants who for months kept their faces and their blistered feet turned toward the setting sun, wearily measuring the ground that intervened between them and their El Dorado, could tell us something of it; but few men live who have traversed the length and breadth of that empire of mountain, and river, and wild beasts, and wild men, which lies between Kansas and the Pacific.

Much of it is said to be too rocky or too barren for cultivation; but what report would a corps of Topographical Engineers bring back from a second New England. Would the Granite Hills of New Hampshire or the Green Mountains of Vermont, or the Sandy Plains of Massachusetts, have put in their mouths a flattering tale of a new Arcadia? Unpromising as the Rocky Mountain region doubtless is, we cannot doubt, that it gives fairer promise for the future, than that inhospitable region first settled by the Pilgrims. Before it at one extreme is the golden treasury of the country, and at the other vast forests of noble pines and in inexhaustible coal beds. Young republics there are, growing up almost beyond our reach yet clinging to us with a love of country, that no distance can eradicate and no absence destroy. To doubt that these extremes of our territory will be united by more than one iron band, would be to doubt the power of that cohesive attraction which we hope to see always binding the Union together. Time will tell the period when all the great enterprises that are linked with the fortunes of the far West, can be consummated. There are five railroad routes to the Pacific—already more or less explored.

1st: Route of the 47th and 49th Parallels, from surveys under Gov. Stevens in 1853-4-5. This survey commences at St. Pauls, Minnesota, and ends at Vancouver, a distance of 1,864 miles. The cost is variously estimated at from \$105,076,000 to \$135,766,000.

2nd: Route of the 41st and 42 Parallels, from surveys of Lieut. Beckwith in 1852, and Capt. Freemont in 1842, and Capt. Stansbury in 1849. This route takes Council Bluffs as a starting point, and terminates at Benica, the capital of California, 2,024 miles, at an estimated cost of \$116,095,000.

3rd Route of the 38th and 39th Parallels, from surveys under Capt. Gunnison and Lieut. Beckwith.

This Route commences at Westport, Missouri, and terminates at San Francisco. The distance in a straight line is only 1,500 miles; but the geographical difficulties in the way, are said to be so great that the actual number of miles to be traversed would not be less than 3,000, and the expense of construction renders it impracticable.

4th: Route near the 35th Parallel, surveyed by Lieut. Whipple, in 1853.

This Route commences at Fort Smith, Ark., and is supposed to terminate at San Francisco, and the length is set down at 2,174 miles, although the equated distances (increased length, on account of ascending and descending grades) is estimated at 963 miles, and the cost is estimated at \$169,210,265.

5th Route of the 32nd Parallel, surveyed by Capt. Pope, Lieut. Parke, and Lieut. Williamson.

This Route commences at Fulton, on Red River, and terminates at San Francisco. The distance is 2,039 miles, and the cost is estimated at \$93,120,000.

The last named Route appears to be most feasible and for several reasons, will be the first finally adopted for the construction of a railroad. The Texian Western Railroad Company has adopted its main positions and direction across that State, and Texas has made it the most liberal grants of land to help it forward. These grants are 10,240 acres for every mile of road completed, and for the whole distance proposed to be traversed in that State, amount to 8,192,000 acres. These lands are said to be of at least fair value for agricultural purposes, and will be put into market by the company, when they have acquired a title, at \$2 50 per acre, reserving certain quantities of the most valuable to form an interest fund. The capital stock of this company is \$100,000,000; but, on this amount, its officers propose to collect but five per cent. If the Texian Western Company complete their road, of which there seems a fair probability, there will be a very long stride taken toward the construction of a Pacific Railroad.

#### THE MECHANICS' INSTITUTE OF CHICAGO.

The Mechanics' Institute of this city was organized in 1843, under an act of incorporation obtained in February of that year, and is one of our oldest and most valuable institutions. Formerly the Institute provided a course of lectures every winter, generally upon scientific subjects; but of late they have been superseded by those of a lighter and of a more immediately popular character. This has resulted from the demands of the popular taste, and not from any want of intrinsic value in the lectures provided by the Institute.

The Institute has also had a general Fair every autumn, with the exception of last year, when it was merged in that of the State Agricultural Society. Those Fairs have in past years done much to stimulate the skill and taste of the public in all departments of industry, and at each recurring season has been looked forward to with lively interest. Some of them have been only second in interest to the splendid industrial festival which came off in this city last fall.

A library was commenced with the organization of the Institute, which by the process of accretion, and without special effort on the part of any one, had up to last fall increased to about 1,200 volumes, mostly of a miscellaneous character, which constituted a circulating library for the use of members and mechanics' apprentices.

From this statement it will be seen that the public are largely indebted to the Institute for the benefits it has conferred upon the community at large as well as upon its members, and it is a matter of surprise that for

a year or two back it has failed to receive that attention and encouragement from our citizens which it could fairly claim. During the past winter, however, the Board of Directors have exerted themselves with praiseworthy energy and diligence to place the Institute on a good foundation for the future, and we are much gratified to learn that they have been successful beyond what could have been anticipated. Through their efforts such additions have been made to the Library as to form the nucleus of one worthy of the advancing fortunes of the city. It has been judiciously divided into departments of circulation and reference. The former is made up of history, biography, tracts, and light reading in general, and when all the books contracted for shall have been received, will embrace about two thousand volumes. The library of reference is already a valuable collection, and it is designed to make it a great storehouse of facts of national, political and social interest, particularly in relation to the great Northwest. As many past publications as possible bearing upon these subjects will be secured, and the most valuable current works of this class will be obtained as fast as they appear. In this department may now be found the principal Congressional documents since 1843, presented to the Institute by Hon. John Wentworth, neatly and substantially bound; a complete set of the Congressional Globe; Reports of the Patent Office since 1840; publications of the various departments at Washington, and among them Schoolcraft's handsome and valuable annual volumes from the Indian Department; Coast Surveys, Explorations and Expeditions undertaken under the direction of the Government; the publications of the Smithsonian Institution and of Girard College; a History of New York, in several large volumes; the complete writings of Jefferson, Madison, Hamilton, and John Jay, and other men of note; Benton's Thirty Years in the Senate; and also a large quantity of French and German books, maps and engravings, which were received from M. Vattemare, at Paris, through Mr. William B. Ogden. The Institute is in the daily receipt of more or less books of value. John S. Wright Esq., recently contributed a set of the Prairie Farmer from the first; and also a set of the Journal of the Franklin Institute at Philadelphia, embracing above seventy volumes. Complete sets of Littell's Living Age, Hunt's Merchant's Magazine, Mechanics' Journal, Scientific American, Putnam's Monthly, Harper's Magazine, and other valuable periodicals have been ordered, and these will hereafter be continued by subscription so long as they may be published. Of course our home newspapers and periodicals are included in the collection. The books alone now number about four thousand volumes.

Nothing need be said to show the value of such a library, especially the more solid portion of it above referred to. Such a collection is indispensable to the statesman, the student of history, the business man, and, indeed, every one who desires to inform himself with respect to all the great practical affairs of the world.

In addition to the enlargement of the library, arrangements have been made by the Institute for a valuable course of lectures next winter, which are to be both of a popular and scientific character, and by the ablest lecturers in the country.

Next fall, also, the Institute will hold its usual Annual Fair, on a larger scale than



ever before. Several hundred dollars are due the Institute from the State Agricultural Society, which will constitute a portion of the funds for the purpose.

The members of the Institute now number about six hundred, which number it is desirable to raise to about two thousand, when the Institute will be placed on a solid pecuniary foundation, and enabled to carry out all its plans for enlarging its sphere of usefulness. The qualifications for membership are now such that persons of any class or profession are eligible, and we are glad to learn that the applications for admission are frequent. About thirty were to be initiated at the meeting last evening.

From this state of facts, is it not apparent that the Institute is well deserving of aid and encouragement from all classes of our citizens? Let as many as conveniently can become members. Let all who have them to spare, contribute books. And let our wealthy and public-spirited citizens aid the praiseworthy exertions of the Institute by liberal subscriptions to its funds.

We republish a list of the officers of the Institute for the year:

President—Geo. P. Hansen.

1st Vice-President—Thos. Speer.

2d Vice-President—I. L. Milliken.

Directors—N. S. Cushing, S. D. Childs, U. Gregory, Z. Eastman, J. L. Moss, I. L. Dodge.

Recording Secretary and Librarian—U. Gregory.

Corresponding Secretary—Z. Eastman.

**MEMORIALS.**—Many thanks are due to innumerable friends, all over the country, for the promptness with which they have filled up and forwarded memorials for a Pacific Railroad. There are many more still out that should now be sent in. This all important subject is now fully before Congress, and action will be had on it. Those who have not sent their memorials in, should do so at once. Have them well filled, and immediately mailed to your own Representatives.

**PENSACOLA R. R., FLA.**—The Florida Democrat of April 3, says:

We learn from Mr. Milner, Chief Engineer, that the survey of the road progresses rapidly.

A large number of laborers for the road left Greenville on Monday last, and will arrive here during next week, when they will commence the grading of the road.

**CINCINNATI & DAYTON SHORT LINE R. R.**—

At a recent election for officers of this company, held in this city, the following gentlemen were elected Directors: William Price, R. W. Lee, James Wilson, Jason Evans, George Hatch, G. H. Pendleton, E. W. Cunningham, J. W. Coleman, Edgar Conkling, Charles Reemelin, Henry Nye, Perry Pease, Charles Butler.

## SOUTHERN PACIFIC,

OR,

Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as installments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

T. WRIGHTSON & CO.,  
Publishers and Proprietors.  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Horn and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, APRIL 28, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, ..... MONDAY, APRIL 28.

### ESTIMATE OF THE OPERATION AND PROFITS OF A PACIFIC RAILROAD ON THE TEXAS ROUTE.

In the last number of THE RECORD we pointed out some of the sources of revenue to the Pacific Railroad, derived from the present transit of passengers and the tonnage of commerce between the Atlantic and Pacific coasts. But if we pursue the subject further and look into the operations of a Pacific Railroad as *creating business* as it goes, we shall be surprised at the results at which we must necessarily arrive. *First*, we have the creation of a local traffic arising from the increased population, settling on the line of a great arterial railroad route, and increasing products. *Secondly*, we have the increased traffic between the Pacific and Atlantic; and *thirdly*, we have the transit of *European Commerce* over the American continent.

*First*. In relation to the *local* traffic, let us take some examples of the growth of local population. It is now 1856, and in the ten years since 1846, has grown up nearly the whole population of Iowa, Wisconsin and Texas, equal to 1,300,000 people. That is, in other words, a movement of *one million three hundred thousand* persons, has crossed the extreme frontier of the country, settled, built towns, and cultivated lands, in ten years. Now, each of these states is, (in the *settled* part) not over 200 miles in diameter. Texas is, of course, nearly three times that in actual length. But the space in which this body of settled population are found does not exceed 200 miles in breadth and 600 miles in length. Now what is called Northern Texas alone,—through which the Texas Pacific road would run—is about the same space. It is, too, a country of good soil, and the finest climate. Then beyond that is the entire Gadsden purchase; and beyond that a large, though very mountainous part of California. We assume, then, what is by no means impossible, that in ten years more, then, a million of people would settle in the country adjacent to the Pacific Road. But as the road would require five or six years to build it in, and some additional time to get it into complete operation, this whole population would be settled there, by the time the road was completed.

This population and the surplus they would produce, and the traffic from the provinces of

Guatemala and Sonora, in Mexico, will furnish at the very least, \$2,000 per mile in local traffic.

*Secondly*, we have the *increased* traffic between the Atlantic and the Pacific. What this would be we, of course, cannot exactly tell; but we have some *data* in the fact, that the traffic on the *long* lines of railroad, such as the New York and Erie, and the Central, and the Baltimore & Ohio, making altogether, 1,400 miles of railroad, has increased at a rate which will *double* in some five or six years.—Counting ten years from the commencement of the road, it would be perfectly fair to count double the existing traffic, which now exists between the Atlantic and Pacific. If we should give half this to the railroad, the result will be startling.

*Thirdly*. Again we have what will unquestionably come to pass—the traffic of much European commerce, taking the railroad as the shortest and best route to the Pacific.

It will be remembered that in our last number we estimated the general result of existing commerce at \$5,000,000 for passengers, and \$8,000,000 for freight, making \$13,000,000, and a net profit of \$6,500,000, the expenses being put at 50 per cent. We ought here to state that in *adding* the amount of through freight, we then made a mistake, substituting 1,200,000 for 800,000 tons.—Half, (which is 400,000) at \$20 per ton, gives the \$8,000,000 above stated.

Now, on the principle we have here stated, we must add to the gross proceeds, \$2,000 per mile for *local* traffic, which, on the Texas route, is about \$3,200,000. So we must *double*, at the *completion* of the road, the *through* freight, which, as the reader will observe, is calculated only for *half* the actual tonnage, which makes about \$8,000,000 more.

The European transit we leave out, having no means of estimating it. We have, then, the following grand result:

|  |              |
|--|--------------|
| For through passenger traffic.....                             | \$5,000,000  |
| Local passenger traffic.....                                   | 3,200,000    |
| Half the present tonnage between the Atlantic and Pacific..... | 8,000,000    |
| As much more when road is completed.....                       | 8,000,000    |
| Aggregate, gross.....  | \$24,200,000 |
| Net, deducting 50 per cent.....                                | \$12,100,000 |

Now, estimating the cost of the Texas Pacific Railroad at \$100,000,000, higher by far, than it has been estimated by any one, we have as the result of its operations, *twelve per cent. net profit*.

We are well aware that two things may be said here: first it will be said that although such a short line as the Panama Railroad may produce such results, yet this cannot be

the case with so very *long a line*. Now, to this we have only to put in opposition one of the commonest and most notorious facts in railroad experience. It is, that *long lines* are invariably the most profitable. The reason will appear evident on reflection. A railroad is like a gathering snow ball. It gathers magnitude, strength and business every new mile.

It may be said again that the Panama route will compete with it. This is impossible.—Two transshipments and two ocean voyages are what no mortal will encounter, if he can go straight across. Not a passenger nor a pound of freight will ever go by Panama, if they can go direct in comfortable cars. There is, then, in addition to the public profit and convenience, the strongest probability that a Pacific Railroad will be very profitable.

### THE TEXAS WESTERN RAILROAD, AND ITS LAND GRANTS.

We have received a printed document, entitled, "*Supplement to the Independent Balance*"—containing a letter from Roswell Beebe, President of the Cairo & Fulton Railroad Company, acknowledging an accompanying paper to be his. This "*Supplement*" contains neither place nor date, so that it may be an imposition on the name as well as character of Mr. Beebe. If not, we are sorry to see such a production from one whom we supposed too respectable to make the assertions it contains. What is said, and with what truth, we shall proceed to show.

Mr. Beebe seems to think that it will in some way advance the interests of the Cairo & Fulton company to understate and misrepresent the character, rights and interests of the Texas Western company. For this purpose he professes to give a fair account of the charter, grants and position of the Texas Western, but discolours the facts and misrepresents the law. We shall here notice only that part which relates to the *land grants* made by Texas to the Western company.

He admits that the State of Texas chartered the Texas Western Railroad in February, 1852, under which charter she granted said company 5,120 acres of land per mile, the work to be commenced within five years, and 20 miles to be completed within six years; and that this company was organized in December, 1854, and that the work is now actually commenced. After these admissions he proceeds to say:

On the 30th January, 1854, another act was passed by Texas, and on the same day, a supplement thereto, granting sixteen sections of land to any railroad company, chartered by the State, who shall complete and put in running order, 25 miles of railroad within two years thereafter, (to wit: by the 30th January, 1856) further donations of land to be discontinued.



unless said companies shall complete 25 miles of road each succeeding year; providing also, that the provisions of said act shall not extend to any railroad, the terminus of which is not fixed on the Gulf Coast, the bays thereof, or on Buffalo bayou, expressly inhibiting the Texas Western Railroad Company from its privileges, leaving it entitled, as before stated, to only 8 sections, or 5,120 acres of land, to each mile of road completed. No part of this latter act is in any way applicable to the Texas Western charter. The error which you have fallen into has no doubt originated from the fact of that company having in their several publications, embodied the first section of that act, carefully leaving out the succeeding 12 sections, which contains the gist of the act, constantly persisting in representing to the public that they have 10,240 acres of land to each mile of road, when they are entitled to only half that quantity. This is by no means calculated to inspire confidence in the company; but on the contrary, it will have the effect to cast suspicion on southern enterprises, retarding rather than advancing the construction of any railroad through Texas, as a part of the proposed Pacific Road.

Here Mr. Beebe roundly asserts that the Western Railroad company are *expressly inhibited* from the advantage of the 16 section grant and confined to the eight sections, granted in the original charter. Not only this, but that the said company have in their publications embodied the first section and *carefully left out* the succeeding twelve sections; which, if these twelve sections were important, would certainly be a wilful deception. Let us now compare Mr. Beebe's assertion with the words of the law:

The 1st section makes a general grant of sixteen sections per mile to all roads *heretofore or hereafter* constructing, &c.; which, of course, includes the Texas Western company, whose charter was granted in 1852. That is not denied. The next ten sections relate, not to the amount of the grant, but to the mode and regulation of it. But the 12th section, to which Mr. B. refers, limits the amount of the grant in certain cases. This section we quote in full, that the reader may see how much an intelligent man may be mistaken in reading a plain Statute. We quote this section from the *American Railroad Journal*.

SEC. 12. That the provisions of this act shall not extend to any company receiving from the State a grant of more than sixteen sections of land, nor to any company for more than a single track road, with the necessary turnouts; and any company now entitled by law to receive a grant of eight sections of land per mile for the construction of any railroad, accepting the provisions of this act, shall not be entitled to receive any grant of land for any branch road; provided, this act shall not be so construed as to give to any company now entitled by law to receive eight sections of land, more than eight additional sections; provided, that no person or company shall receive any donation or benefit under the provisions of this act, unless they shall construct and complete at least twenty-five miles of the road contemplated by their charter within two years after the passage of this act; and such donations shall be discontinued in every case where the company or companies shall not construct and complete at least twenty-five miles of the road contemplated by their charter, each year after the construction of said first mentioned twenty-five miles of road; and further provided, that the proviso herein contained shall not extend to any railroad, the terminus of which is not fixed on the Gulf coast, the Bays thereof, or on Buffalo Bayou, and that nothing in this section shall be so construed as to extend the duration of any existing charter, and

further provided, that the certificates for land issued under the provisions of this act, shall not be located upon any land surveyed or titled, previous to the passage of this act; and further provided, that this act shall continue in force for the term of ten years from the time it shall take effect and no longer.

Now, if the reader has carefully read this section, with the paragraph we have quoted from Mr. Beebe, he will see that *no such thing* as he asserts, is in the section!

He says, "providing, also, that the provisions of said act shall not extend to any railroad," &c., &c.; while the section says, "provided the proviso herein contained shall not extend to any railroad, the terminus of which is not fixed on the Gulf Coast," &c.

The proviso herein contained, was one which just preceded this, as is plain. All other roads than the one not terminating on the Gulf, &c., were left to the general provisions of the law. The provisions of said act, and a proviso in it are two as different things, in legal effect, as can be conceived of. The one is a general proposition and the other a limitation upon it. The limitation of the proviso is expressly excluded from all other roads, than those terminating on the Gulf. But to make assurance doubly sure, this act construes itself. In the first clause of this section, the phrase "provisions of this act" is expressly used, and declared not to extend to any company receiving from the state a grant of more than sixteen sections—the Atlantic and Pacific, for example; nor to those companies receiving eight sections, and accepting the provisions of this act, for any branch road. The distinction between "provision," and "proviso," the act has drawn itself, and moreover, distinctly acknowledges, that a road receiving *heretofore* eight sections, may receive *sixteen*. To avoid this conclusion, a *supplement* to the act, was passed, which limits the amount to *sixteen*.—This is, the act of January, 1854, expressly grants precisely what Mr. B., or some one in his name asserts, that it does not. It does grant *sixteen* sections, and would, but for the supplement, have given twenty-four.

For what reason would Texas cramp the Texas Western Road, on the main route to the Pacific, when her pride, her interest, and her feelings were embarked in it? And why should this discovery be reserved for the Cairo and Fulton Railroad, when neither the Legislature nor any of the parties interested have suspected it? The truth is, the grant of sixteen sections is plain—the work has been commenced under it—with a prospect of successful progress.

We have made this statement, because *justice* seems to require it, and because we think that the Texas Pacific Company should be fairly presented to the public.

#### MEMPHIS AND OHIO RAILROAD.

Our readers are aware of the important position this road occupies in the southern system of roads, it being one of the main links in the projected system of roads connecting Memphis, the head of uninterrupted navigation, on the Mississippi, with the Ohio Valley

at Louisville and Cincinnati, and thence with the northern cities. We are indebted to a friend for the following details:

"The length of this road is 148 miles, extending from Memphis through Brownsville and Paris to the Tennessee river. It there has an outlet north by Memphis, Clarksville and Louisville Railroad, to Bowling Green, Ky., thence either to Louisville or to Lexington, Ky., by projected roads. The road has been under contract about two years.—The grading of the first fifty-six and a half miles, from Memphis to Brownsville, is finished ready for the iron. The track is laid forty-four miles, and passenger and freight trains running. By the 1st July the road will be opened to Brownsville.

The line is located from Brownsville to the Tennessee river, occupying almost an air-line between these points. Ruling gradient, 52.82 feet per mile. Minimum radius of curvature, 57.30 feet (1° curve), generally of larger radius. South of Brownsville, the ruling gradient is 40 feet, with a few curves, of as small radius as 2640 feet, (2° curves.)

It is now proposed to place under contract the Northern division of this road, and thus force the two ends together, laying the iron from each end. This will leave a space of about 80 miles, intermediate, to be provided for, which I feel confident can be done by 1st July, 1857.

Furthermore, the Memphis, Clarksville and Louisville Road have a sufficiency of funds to prepare their road for the iron. 30 miles from the State line is to be placed under contract the 24th April, and there appears to be a good prospect of the early completion of the Louisville and Nashville road, thus giving us an outlet to the Ohio Valley at Louisville.

The State has given aid to the amount of \$10,000 per mile for these two lines in conjunction, from Memphis to Tennessee and Kentucky line."

NOTES AUXILIARY TO THE NUMBERS "ON THE PACIFIC RAILROAD," NEAR THE 32d PARALLEL OF NORTH LATITUDE, IN CONNECTION WITH THE ACTUAL SURVEYS OF THE WAR DEPARTMENT. BY THE AUTHOR.

NO. IV.

*Railroad Record Supplement*, March 17th, page 4th, 2nd paragraph, 15th line, for 40-100, read 6 45-100, being 6 per cent. and 45-100, or nearly 6½ per cent.

1st column, page 5th, 4th paragraph of said page, I quote, "And I think the transportation of flour may be afforded at 3½ cents per pound, or seven dollars per barrel. In a year of high prices in Asia, this expense would not prevent a great trade. It would sell at from \$15 to \$20 per barrel." At seven dollars per barrel, a million of barrels would bring to the railroad seven millions of dollars. Although the wear and tear of a road is great



where there is so much heavy freight, and the expense of spacious cars to carry such freight would be considerable, yet I do not believe that all this expense to the road would exceed, for a million of barrels, over six millions, leaving one million of clear profit; and more in proportion, if the transportation of this article exceeded one million of barrels. This gain to the country, by sales in Australia and Asia, would average nine dollars per barrel in each year, or be a gain of nine millions of dollars in one million of barrels. Heavy cargoes of flour from the Atlantic States, and from California, sold last year in Australia, at from \$22 to \$24 per barrel. Australia has an extent of three millions of square miles. It is admirably adapted to grazing, but can never produce large quantities of wheat. Its gold mines are very valuable, and constitute an immense accession to the wealth and strength of Great Britain. Without the advantages which they have given her, she would have been financially embarrassed by the Russian war. As things were, this war did not begin to embarrass her finances, although so vastly expensive. In process of time, Australia will become independent, and be an empire in itself. Great Britain cannot, of course, supply her with flour, for, ordinarily, she has not enough to supply her own dense population.

China is a vast country, with 360,000,000 of people. The far greater part of China proper is very densely populated. Occasional famines occur, which, in so vast a population, are appalling. Flour would, in such circumstances, be bought at a high price, in goods or money. A railroad across the continent by the short line of the 32d parallel, can alone enable a supply to be forwarded to meet the demand in that country, of scarcity or famine.

The ascending scale on which I have estimated the progressive increase of business on the road, is obviously moderate in the United States. On an average, property increases at a rate not less, in this country, than 8 per cent. *compound* interest. The estimate of 4 per cent. *compound* interest, is therefore extremely low. I have said, in the text, speaking of the United States, "Such has heretofore been the average increase in the value of property, it is nearer ten per cent. per annum than five."

3d column, page 5th, paragraphs 5th, 6th, and 7th. The Danville, Virginia, Railroad, I see it stated in the *Baltimore Sun* of yesterday, has, in less than a year from its construction, augmented the value of land from three to four hundred per cent. But that is a populous country. Its products, nevertheless, are not so valuable as those of the country on which I remark the effects of a railroad in the paragraphs above mentioned; yet I calculate the value at only 100 to 200 per cent. The truth is, population would flow with great rapidity into the regions I have

sketched in those paragraphs, by the construction of the railroad. It would confer safety, by causing the Indians to cease their depredations. The Comanche of our western plains, swift though he be, is distanced by the velocity of our railroads. In connection with the posts near its line, it would speedily cause all the Indians within a hundred miles on each side of it, to give up all attempts at murdering and plundering. From the crossing of the Red River to the Llano Estacado, 352 miles, it would give the pale faces un molested possession of 70,400 square miles, where they do not now occupy in entire security 20,000 (twenty thousand).

Supposing the road constructed at the rate of about three hundred miles per annum, and to begin with equal forces at each terminus—that on the Pacific, and that on the Atlantic slope—then in one year 150 miles will be completed, commencing with each terminus; and in two years three hundred miles from each terminus—the several roads advancing towards each other. The whole distance from the beginning, in the Mississippi valley, to San Diego, is 1,618 miles. Six hundred being completed in two years, there would remain intermediate between the approaching roads 1,018 (one thousand and eighteen). Let this be done, and 20,000 emigrants per annum would proceed to California by this route. A line of coaches would be established, and what that could not carry on the intermediate unfinished portion, would be transported by mules and oxen, comparatively fresh, which the emigrants themselves would purchase or supply. The intermediate distance would each year be diminishing to the extent of three hundred miles; the expense would be diminishing, and the comfort otherwise increasing. The way travel would be considerable on each portion of the finished line, and transportation of the mails, and of troops would begin from the end of the second year. It is not, therefore, a vast burden of expense, that is to be borne without remuneration for a series of years, in the construction of this road. It might be opened to the public as soon as one hundred miles is constructed on each side—and after that, whenever an additional twenty-five miles is completed. Thus settlement and way travel would be promoted at a quick rate of increase.

Across the Llano Estacado to the Pecos river, is 125 miles. From the Rio Pecos to El Paso is 163 miles; and from the head of Delaware creek to El Paso, 145 miles. (See Capt. Pope's Report, p. 32.)

The valley of the Rio Pecos is extremely fertile, and can, in many places, be easily irrigated. Hence that may become an agricultural country—although, in the first instance, it would be easier to form grazing farms in other portions.

The Delaware Springs would probably be an unrivaled watering place.

"The most easterly range of the Rocky Mountains is the Guadalupe Mountains, in) this section, near the 32d parallel,) one hundred and eight miles from the Rio Grande, and fifty-four miles west of the Pecos." (Capt. Pope's Report, p. 12.)

"Water is found at intervals, not to exceed twenty-eight miles, between the Rio Grande and the Guadalupe Mountains; and from the western base of the mountains to the Pecos, abundant springs of water, both fresh and mineral, occur at much shorter intervals." (Same Report, p. 12 and 13.)

"The grama grass, which exists in the most profuse abundance over the entire surface of these table lands, is nutritious during the whole year; and the plains between the Rio Grande and the Pecos seem intended by nature for the maintenance of countless herds of cattle. Although little protection from Indian depredations has been afforded, and incalculable quantities of stock have been driven off by them, the number appears to be undiminished; and as the original cost is small, and the expense of feeding nothing, cattle and horses are the most abundant possessions of the people of New Mexico."—(Capt. Pope's Report, p. 13.)

This is part of the country called by Bonnycastle "Pimeria." He says, p. 77, "It received its name from the Pimas Indians, who inhabit this tract of country."

Although our knowledge of this country is more minute than when he wrote, (38 years ago,) parts of his description of it, and of the Colorado River, which runs through it, according to the limits he assigned it, are still entirely accurate. I quote such parts as are of particular interest—p. 77:

"The river Colorado is the principal river of the uncolonized country of Pimeria. The course of the Colorado may be computed, in a straight line, at 200 leagues, or 600 miles, and it is generally from north-east to south-west. It is called Colorado, or colored, from the water being tinged red by the clay of its banks. This river rises in the Sierra Verde; it is navigable for a considerable distance, and very deep where it is joined by the Rio Gila, which issues from the same mountains in Pimeria, further to the south. The latter river, though broad and large, has no depth, and the country which lies between the streams is a desert of high land, without water or grass. The savages who inhabit the northern side of the Colorado are named Cocomaricopas. Their side of the river is fertile, and they are an industrious people. The Colorado empties itself, by an immense estuary, into the northern part of the Gulf of California. The Rio Gila is the next river of importance of this country.

"The province contains much gold, in grains, but it is not sought after, owing to many causes; amongst which the incursions



of the warlike Indians of the neighboring country is the principal one."

NO. 5.

For Article 3d, read 4th, 1st column, 5th page of the *Supplement to the Railroad Record* of March 26, 1856.

Page 5th, 3d column, 3d paragraph, for Ortza-koff, read Otchakoff.

In the poetry, same column, for hopeless, read hapless.

The duty of a National Government to defend all parts of its possessions, by means reasonably adequate, is so obviously obligatory that a labored argument is scarcely necessary to prove it. The law of nations recognizes this as one of the duties of government, even if the national constitution of any people fail to inculcate it, or expressly acknowledge it. It is the duty of a nation which is obliged to throw the chief part of the defense of any large district over which it claims sovereignty, upon that particular district, to relinquish the claim of sovereignty; because it does not fulfil the duties on which the claim of sovereignty may be justly founded. The right of sovereignty implies as its correlative duty, the willingness to bear, and the ability to sustain the chief burden of protection. If a nation is in such a situation that it is wanting in the physical ability to protect or furnish the principal means of protection to some large and distant section of its territory, it is its duty frankly to confess its weakness, and to relinquish the claim of sovereignty, and it may be to substitute some league, or alliance, by which the province or great section shall be less unequally yoked together with the sovereign authority. In reference to remote provinces or sections, the necessity of far-extended roads for ready communication with them, is long since a demonstrated truth. The Romans understood this truth perfectly, and practised it far better than we do. To bind all the parts of their empire together, by roads, the best in kind known to the ancients, was, after conquering a province, one of their first cares; a systematic part of their policy vigorously pursued, as well as wisely adopted. We have had in possession the most valuable country ever obtained in modern times, at an equal expense of blood and treasure, for nine years. We have for over seven years, been deriving from it unexampled benefits to our commerce—to our whole internal trade; we have found in its golden stores the incalculable benefits of an abundant and specie currency—and we have not even begun, on any great scale, a good wagon road for emigrants across the immense and savage-vexed plains and mountains that separate it from the populous cities and settlements of the Atlantic slope. The Peruvians, when Pizarro discovered them, were in advance of us in this respect, with all our boasted civilization. And the slow-paced and narrow views which some, assuming to be *par excellence* strict constructionists, entertain on the subject, would keep this nation forever behind those heathen, immeasurably as they were behind us in the religious and moral light vouchsafed to us. We

should, under their system, sink into a race of demi-savages, amidst the light of the glorious gospel of Jesus Christ! That we are not reserved to such a dwarfed, unsocial, and anti-Christian condition, I feel morally certain. With the Bible and domestic utensils of ordinary life in their hands, the rifle and the cannon in their magazines, our fathers preached the gospel, penetrated the wilderness, and overawed the savage, brooding in moody revenge over his imaginary wrongs, and in sixty years (1847) from the establishment of the federal constitution, planted the stars and stripes on the broad waters that lave alike the shores of America and magnificent Asia; and is the mighty tide of our progress to be turned back by these unreasonable scruples?

Bonnycastle, (p. 209) speaking of one of the roads which the Peruvians had constructed, and which was 1500 miles in length, gives this account: "This road was carried with indefatigable labor over mountains and through swamps. Valleys were filled up, and rocks excavated to an immense extent; and so smooth and level was its surface, that a coach might have been driven along it with the greatest safety. It has since suffered considerable dilapidations from the wars between the Spaniards and Peruvians; but enough is still left to show the magnificence of the undertaking.

"After returning to Cuzco, the Inca projected another road, by the low-lands, to Quito; high mounds of earth were laid across all the small valleys formed by the torrents from the mountains, in order to make the road level, and it was forty feet in width, which was marked, where it crossed any wide plains, by stakes on each side, to prevent the travelers from losing their way. This second causeway was five hundred leagues (fifteen hundred miles) in length."

I have said, "Let us not indulge in dreams of unmolested peace." Mr. Clayton has remarked recently that war would come before the rail-road could be built; and therefore that we must have the Nicaragua route kept open. He seems to have calculated as erroneously the relative expense of keeping open that route and constructing the road as he did the Clayton-Bulwer Treaty. Disregarding the maxim of Thomas Jefferson, so wisely uttered, that we should have entangling alliances with no nation, he made an alliance for a particular object, with the monarchy of Great Britain, by a treaty, which has failed of anything but to involve us in a serious dispute with Great Britain. Undoubtedly England is essentially wrong in her interpretation of the treaty; but it was a great error on our part to make any treaty upon the subject. Mr. Jefferson said: "Peace, friendship and commerce with all nations; entangling alliances with none." Especially should we shun all alliances with the monarchies of Europe, or any one of them. I speak of them while they continue monarchies. They will never be true to any alliance with this republic, should such a one be made. But I think this Clayton-Bulwer Treaty will give us a surfeit of all such—and although I am not now apprehensive of war, since peace has been con-

cluded in Europe, it will require judicious management to get clear of the difficulties of Mr. Clayton's "entangling alliance." The enlistment question could not, of itself, produce war; but might serve as an aggravation of the really serious dissension growing out of the Clayton-Bulwer Treaty.

Mr. Clayton's plan is to keep open the route by Nicaragua. To do this in defiance of any hostile force from any one of the great naval powers of Europe, we must throw upon the ocean within a very short time, fifty millions of dollars worth of vessels of war and equipments, independently of the annual cost of paying the officers and sailors necessary to man them. The smallest amount of naval force with which we could undertake to keep this communication open, would be 15 ships of the line, or their equivalent, 20 frigates, and 20 sloops of war, and 40 transports, in each ocean; i. e., in the Gulf of Mexico and in the Pacific making 15 plus 15 plus 20 plus 20, or 70 vessels of war and eighty transports. Add to this, we must have not less than eight thousand men to keep the road across the Isthmus of Nicaragua clear, and the construction and a single year's expense of all this armament and their munitions of war would equal, if not exceed the sum necessary to build the railroad to San Francisco. We must go out of our territory a distance of 2,500 miles to keep open a road at an expense for one year which would more than build the road to San Diego, and be quite sufficient to build it to San Francisco.

Why is it that Great Britain and France have in two campaigns brought to a successful close their war with Russia? One of the indispensable means has been the superiority of their transportation. They have been able, by reason of this, to concentrate men and provisions, and every munition of war with far greater facility than Russia could. If Russia had possessed at the beginning of the war a long railroad to the Crimea, she could have concentrated men and all the supplies of war with as much, or more facility than the Allies, and might have made a successful resistance. But this not being the case, she has found it necessary to make peace on terms such as she has never made before, in the last hundred and thirty years—the peace of Tilsit excepted.

TEXAS ROUTE FOR PACIFIC RAILROAD.—A thorough examination of the route through this, state to the Pacific both by government surveys, and by Col. Gray, has led to the bringing of new facts to light, showing that the route through Texas, has unquestionably the advantage over all others hitherto spoken of.

The first reason why it is best, says the *Rail Road Record*, is because it would benefit the greatest portion of the population of the Union.

And it is the nearest by several hundred miles. The *Record*, says that this is conclusive but also shows that it would almost be impossible to run a car on a road through the Rocky Mountains in the winter.

Thus the eyes of all men everywhere are being directed to the route through Texas—and not alone through this State, but to the line of 32deg as the future road for the world to travel upon with wonder and delight!—*Prairie Blade*, Nov. 14.



## NAVIGABILITY OF THE MISSOURI.

CONTINUED.

The next and last portion of the river to be considered is that which is included between Fort Pierre and the mouth of the Poplar.

From the last mentioned point to Fort Union the Missouri pursues a direction a little south of east, and thence to the mouth of White Earth, a little north of east.

The latitudes of these three points are respectively about  $48^{\circ} 05' 48''$ , and  $48^{\circ} 07' 30''$ . Without all my notes I am unable to state precisely at what point the Missouri attains its highest north latitude, but I think it is near the mouth of the Great Muddy.

From the mouth of the White Earth to Fort Clark, the direction of the Missouri is southeast, and thence to Fort Pierre it is south. The length of this section is about 715 miles.

Above Fort Union the river varies in width from one hundred and fifty to three hundred yards; at that point it has been found, by pacing on the ice in winter, to be three hundred paces wide; and from Fort Union to Fort Pierre it varies in width from three hundred paces to eight hundred yards. I would remark that my statements of the general width of the river are merely estimates, as I had very few opportunities to make measurements.

Not far north of Fort Pierre a second "great bend" occurs, of which the distance across is about eight miles; that around about twenty-five miles; its apex is toward the west. A third "great bend" is found not far north of Fort Berthold, of which the distance across is about twelve miles; that around about forty miles, and having its apex towards the southwest. These are distinct from that general change of direction in which the Missouri, after flowing from the southwest, runs near the 48th parallel to the mouth of the White Earth, and then suddenly turns to the south-southeast and south. This is called the "Great Northern Bend of the Missouri."

Besides this river, the great features of this region are the Yellowstone, which takes its rise in the Rocky mountains not far from the headwaters of the Missouri; the Black Hills, which, starting from the Platte not far above Fort Larimie, pursue a north-northeasterly direction parallel to the Little Missouri, and finally become blended with the bluffs of the Missouri east of Fort Union; and the Grand Coteau or ridge, which, running nearly parallel to the Missouri at an average distance of about forty miles, connects, according to my information, with the Rocky mountains north of the 49th parallel, and divides the waters of the Missouri from those of the Saskatchewan, from those of the Red river or the North, and from those of the Mississippi. I think it unquestionable that only in a far-distant future will any great extent of this country be inhabited by white people. The valleys of the streams alone seem now to present inducements. The hills and ridges are generally covered with a nutritious grass, more sought after by cattle than that in the valleys. The great variety of flowered plants to be met with gives a degree of beauty to the undulating plains.

The following is a general statement of the ease of navigation of the Missouri above Fort Pierre. As far as the mouth of the White Earth the obstructions are comparatively few, and the navigation safe; although the main fact on which I state this, the ease and speed with which we passed over that portion of the

river, is partly due to the light draught, three and a half feet, of the steamboat above Fort Pierre. Above the mouth of the White Earth the river has an exceedingly tortuous course, and is impeded by an unusual number of sand-bars, snags, &c. In addition to which above Fort Union it becomes much more narrow, and is very rapid at all bends, many of which, instead of being curves, are nearly in the form of a right angle. It was in this part of the river that it was noticed nearly every tributary corresponded to an island in the Missouri near its mouth—sometimes below, sometimes above. This is, perhaps, due in part to the difference in velocity of the streams.

The "cretaceous formation" continues for some distance above Fort Pierre, and is succeeded by the formation of clay and marl containing beds of lignite, which continue to the mouth of the Poplar. As the water of the Missouri at Fort Benton is clear, and as from the Poplar to the Mississippi it has a deep muddy color, this, it seems to me, must be imparted by the flow through the clay and marl formation.

We left Fort Pierre early on the morning of the 21st. The bluffs at this place are about four miles from each other, and equally distant from the river. During the day I noted many points that were suitable for settlements; they had a tolerably rich soil and produced fine grass. The river in many places was well timbered with cotton-wood, intermingled with which was a small quantity of ash. Cedars were observed in small numbers in the ravines. Many tracts of dead trees standing were seen on the "Burnt Hills" along here; there were noticed indications of "slides," and of the earth having caved in, probably on account of combustion in the interior.

On the 22d, the river was wide and not very rapid. We had to halt early in the afternoon on account of a high wind.

On the 23d, the character of the river and country was not materially different from what it was observed to be on the 22d.

On the 24th, it was found difficult to procure a sufficiency of fuel. In the afternoon we passed the "Grindstone Buttes"—a singular group of hills, whose sides slope from the prairie at angles of from  $30^{\circ}$  to  $45^{\circ}$ . They were covered with grass, but no trees were observed to grow on them. Of a great extent of this portion of the river, both below the mouth of the White Earth and above Fort Union, it may be remarked that, outside of the river bluffs, there are plains or terraces several miles wide, and from which rise other ranges of hills or bluffs. For some distance above the "Grindstone Buttes," it is characteristic that many similar hills, or groups of hills, occur on those plains or terraces. In shape they are sometimes conical or truncated, sometimes dome shaped, and occasionally have the form of ridges.

The steamboat did not halt on the night of the 24th.

On the 25th, the land appeared richer than on the 24th. The hills, it was observed, were not as high nor so irregular, and produced better grass. Very little or no lignite was seen. The "Burnt Hills" almost entirely disappeared. The bottoms were wide and well wooded. Besides the cotton-wood, there were noticed the ash, elm, willow, and in the ravines the cedar, all of which were small in size except the cotton-wood.

On the 26th, the river was narrow, tortuous and swift. Being high, it had in several pla-

ces overflowed the wide bottoms at the bends. In the afternoon we noticed, at some distance from the river, high hills shaped somewhat like a sugar-loaf, and which were entirely bare of vegetation. The great number of grass-hoppers that we saw in this portion of country was remarkable. At one point they might be said literally almost to cover the ground. By their motion in the grass, they made quite a loud noise. I was informed that often they frustrate the attempts at cultivation made by the Indians, and at the trading posts.

On the 27th, we passed the "Square Buttes," which rise from the plain at angles of about  $45^{\circ}$ . They are truncated, and average about three hundred and fifty feet high. In the afternoon we were compelled to halt, on account of a high wind. During the night it was very cool, and the wind blew furiously from the northwest.

On the 28th, we did not travel on account of the storm. The day was so cool that at noon the thermometer stood at  $54^{\circ}$  above zero. There were several pieces of ice seen floating down the river. I was furnished with the following explanation of this fact: In winter, the river being frozen, the ice occasionally breaks up at some points, as between Fort Union and Fort Benton, in consequence of which an accumulation takes place at points below, where the same "breaking up" does not occur. Some fragments of this ice are thrown ashore, and perhaps by high winds become subsequently covered with sand. In this way they are preserved from melting, and when the river rises in June are carried down the stream.

We reached Fort Clark early on the morning of the 29th. The Indians at this place cultivate, with tolerable success, corn and some vegetables. The country for some distance above this post may be thus described: While on the left bank there were wide bottoms and extensive prairies producing fine grass, on the right were bluffs one hundred and fifty or two hundred feet high, and nearly vertical, containing lignite and red clay, and having near them a number of hillocks bare of vegetation, and in shape somewhat resembling a sugar-loaf. The "Burnt Hills" reappeared in some places.

We reached Fort Berthold at 1 o'clock on the 30th. The Indians here cultivate the land to some extent. In the vicinity of this post, as well as above Fort Union, it is characteristic that many ranges of nearly vertical bluffs, one hundred and fifty to three hundred feet high, and bare of vegetation, occur, rising from the plains or terraces of which mention has been made. By the variety of colors imparted to them by the red clay, lignite, and a white substance they contain, they present a picturesque appearance. The white is sometimes the color of a rocky stratum, and sometimes it is from a mere incrustation. These bluffs occasionally run parallel to the river, but generally make an acute angle with its course. They sometimes have quaint forms, reminding one of the appearance which old towns or castles have when seen in the distance. They are often called by the traders "les mauvaises terres," on account of the species of quagmire they contain. These are depressions filled with clay, which is covered with a white incrustation, giving the surface the appearance of being firm.

On the 1st of July we passed the mouths of the Little Missouri and White Earth rivers. The extent of the forests of dead trees to be seen near the latter stream is remarkable.



On the morning of the 2d the river was overhung by a dense fog.

We passed Fort William and the mouth of the Yellowstone in the afternoon of the third. The water of this stream had a deep muddy color, like that of the Missouri. It was about four hundreds yards wide at its mouth, but this contained a large sand-bar. I was informed that the Yellowstone might be navigable for two hundred miles to rapids, these being susceptible of improvement, and beyond which no obstruction would occur for a considerable distance. If this were found by future examination to be correct, that river might become the means of communication, by steamboats, with a large area of country; more particularly if it be supposed that favorable routes exist from the head of that navigation to Fort Laramie, Fort Hall, and the Salt Lake, and to the valley of the Bitter Root river.

A short distance below Fort Union the Missouri appeared, so to speak, entirely choked by sand-bars. For two or three hours the channel could not be found. But finally we proceeded by a narrow and deep slough, between a sand-bar and the left bank. We reached Fort Union at about seven P. M.

The fourth was employed in unloading the boat of such freight as was not to go to Fort Benton. Her draught above Fort Union was about two feet. The Fur Company has a farm about eight miles below this post. Not much success has attended the attempts at cultivation. The grasshoppers are a source of much injury to the crops. On the morning of the fifth we proceeded, with the intention of going as far as the mouth of Milk river. I left all the party at Fort Union except Sergeant Collins and private Wilson, of the sappers. The river was averaged about two hundred yards wide, and was not unfavorable for navigation. The channel was about seven feet deep, the river being nearly six feet below high water mark. The current was not very rapid. The Missouri generally flowed through a narrow bottom, with bare, rugged, clay bluffs on each side.

I would remark here that, during our ascent to Fort Clark, the river was generally rising at the rate of from two to seven inches during a night.

At one point above Fort Union I noticed that the soil was rich, and somewhat resembled that in the State of Missouri. Some idea may be formed of the retentive nature of the soil above that post from the statement of the following fact: Directly after a profuse rain, and when the rivulets were swollen, the rain-water was, for some distance, observed falling from the bank into the river in an unbroken sheet.

**DISCOVERY OF A NEW SALT MINE**—The State Journal says that discoveries of valuable minerals are being made in California almost monthly. It is in fact a mineral country. A few days since, in Cache Creek Canon Yolo County, was discovered one extensive bed of fossil salt. Through this Canon do the waters of the Cache Creek flow from the Clear Lake Valley to the Sacramento Valley. The Canon is some twenty miles long, will average nearly three in width, and is enclosed on either side by a range of hills. About half way up the Canon and on the north or Valley side, is the fossil salt bed. There is a Canon running northward through this valley side range from the summit of the mountain, on either side of which the salt, ready for use crops out vastly. We, ourselves, saw its bald head many months since, peering in the noonday sun with dazzling brightness: but as it is a lonely spot, where hunters seldom go, and

traveller never, our curiosity was not sufficiently excited to lead us on a prospecting tour. The salt is there though and in any quantity. The full extent of the mine cannot be stated, but enough is known to justify us in saying that there is sufficient to supply California for half a century. Salt is next to bread, the most important necessary of life, and this new mine makes this emphatically a self-sustaining country. In the county of Los Angeles a brine spring was made known some two years since, and a company is now engaged in gathering there from by means of evaporation. Here, too, there is a brine spring, which sends forth continually a stream sufficient to make four or five mill-races, which is deeply impregnated with salt. The property is already squatted on by the discoverers, who in addition to their possession, will cover it with land warrants.

## Opinions of the Press.

From the Cincinnati Gazette

### TEXAS WESTERN RAILROAD—LETTER FROM JUDGE VANCE OF HAMILTON

HAMILTON, O., OCT. 29, 1855.

DEAR SIR:—I have read the Railroad Record Extra, which you had the goodness to send me, with a good deal of care, and I am free to say that in my opinion, there is no Railroad enterprise in the United States which has hitherto been engaged in, or which hereafter may be undertaken, which can hold out half the inducements now offered by that of the Texas Western Railroad Company.

According to the statement of Senator Rusk, made in a speech at the city of Nacogdoches, May 11th, 1855, the State of Texas holds yet about one hundred millions of acres of unsold lands. A very large proportion of these lands are among the very best lands that can be found in any of the States of this Union. The climate is far superior and safer as regards health, than that of the Miami Valley. The superior advantages of Texas, as respects soil and climate, together with so large a body of lands as yet undisposed of, have drawn with unparalleled rapidity emigrants from almost every portion of Europe, as well as from every quarter of the United States. The beautiful prairies of Texas, by the hand of the enterprising planter, are rapidly being made to yield the richest and most abundant harvest. And there is now no State or Territory in this Union where prosperity and wealth can be attained by so small an amount of capital and labor. As yet the soil is comparatively cheap; and there is no other region in the United States that produces so abundantly with so little toil and attention. In a few years Texas will take the lead of any other portion of the world in the culture of the grape and in the production of wines. Stock will live and fatten throughout the whole year upon the grapes alone. Cotton, corn, fruit and vegetables grow abundantly in every portion of Texas. Sugar succeeds well in the Gulf, or southern region; and I have no doubt of the fact stated, that wheat can be grown far more successfully upon the line of the Texas Western Railroad, (the 32d parallel of latitude,) and north of it, than in any portion of Ohio—especially is this true in respect to the growing of Genessee wheat.

I have examined the law of Texas appropriating sixteen sections of land for every mile of railroad constructed under authority of law, in the State. This provision will give to the Texas Western Railroad Company some eight millions one hundred and ninety-two thousand acres. These lands will build every mile of the road, and there will be a large surplus left, under a prudent and wise economy. About the same quantity of lands, say eight or ten millions of acres, will construct four different lines of road, running from commercial points on the Gulf and intersecting the Pacific line of road,

on the 32d parallel of latitude. All these lands can be readily spared by Texas, and still there will be left some seventy or eighty millions of acres unappropriated. And no one can venture to calculate the increased value of these lands, which will necessarily result from the active commencement of these railroads under the encouraging prospect of their completion within a reasonable time. The commencement, too, of these roads, would draw to Texas half a million of emigrants in the course of the next three years.

In view of the unparalleled advantages offered by Texas to railroad enterprise, I cannot but believe that these roads will be speedily made. The Texas Western Road, too, must of necessity become so much of the trunk of the great Pacific Road. One thing, however, ought to be urged at the next sitting of the Legislature of Texas; that is, the setting apart and surveying the lands donated for railroad purposes. The company should know where their lands were to be located. When so set apart, they can be protected from the avarice of speculators and others, who would seek to appropriate the lands in the vicinity of the line of improvement. If I understand the law, there is only as yet three miles immediately on either side of the road which is protected from location by outsiders.\* If all the railroad lands should be set apart and thus designated, additional confidence would be inspired upon the part of those who are disposed to subscribe stock to the road. This precaution would also facilitate the raising of money upon the basis of the lands so appropriated.

The road you spoke of the other day, commencing at a point on Matagorda Bay and extending to San Antonio, I regard as a very important line of improvement. First, it runs through a very delightful and productive region of country; and secondly, there can be no doubt but that this road will speedily be made to form a direct connection with the Pacific Road, in the coal and timbered regions on the upper branches of the Brazos. This whole line of road would run through a region possessing a climate like Italy, and as productive and fruitful as a garden. The lands appropriated would make every foot of this road, and there would be a large surplus left. The whole line of road would run through vineyards and gardens, watered by pure and rapid streams. In this region, too, the grazing business will be immensely profitable; and there are no portions of our Union which possess so pure an atmosphere. This improvement would speedily introduce in that region of Texas an incalculable amount of wealth. It would become the Italy of the United States, and the store-house of the luxuries of life—the Palestine of the New World.

Respectfully yours,

ELIJAH VANCE.

Wm. B. Barry, Esq.

\*Judge Vance is mistaken here. We learn that all the unsold land lying between the thirty-first and thirty-third degrees of latitude are exempt, by positive law, from entree, and set apart for this railroad purpose. This land is the best part of Texas.—*Eds. Gaz.*

From the Cincinnati Commercial.

### A RAILWAY TO THE PACIFIC.

Nothing is more a subject of wonder, even to ourselves, than the rapid progress in material improvement constantly going on around us, and which while we are almost unconsciously aiding its march, perpetually outstrips our calculations, and renders the visionary of yesterday the practical of to-day and the actual of to-morrow. We remember very well—and it is but a few years ago—a learned essay, written by an able New York editor, proving, to his own satisfaction, that although



the magnetic telegraph was a very, ingenious invention, there was no probability of its coming into general use. It might be made remunerative on one or two great routes, as between Washington and Philadelphia or New York, but the idea of its extensive adoption was absurd. Had the author been informed that in less than six years from that period the wires would reach nearly every county seat in the State of Ohio, he would, doubtless, in all the consciousness of superior knowledge, have laughed in the face of his informer. And yet the thing was done, and that by no other instrumentality than the unaided energies of an active and enterprising people. So, while a scientific Doctor of Laws was engaged in demonstrating in a course of popular lectures, the impossibility of navigating the ocean by vessels propelled by steam, the first steamship was battling with the storms and billows of the Atlantic, and that which then by all pre-existing rules of admeasurement was impracticable, has now become a mere everyday occurrence. Thus it is ever; under the oppression of our own individual weakness, we forget the mighty power of the aggregate man, and can form little idea of his potency in any new combination of circumstances.

That which, a few years ago, seemed the climax of the visionary—a Railway from the Atlantic to the Pacific coast—is fast assuming the form of a real enterprise. Circumstances unforeseen when the project was first announced, have brought new and most important elements—whose existence, until they appeared, could not have been predicted—into the calculation—changing materially the aspect of affairs, and giving to the proposal the appearance of practicability, strongly indicative of successful prosecution in a not very distant future.

Among these elements are, the rapid settlement of Texas incident to its admission into the Union; the establishment of large, enterprising, wealthy, and rapidly increasing communities upon the Pacific coast, consequent upon the discovery of the vast mineral and agricultural wealth of California; the acquisition by the United States of a strip of territory through which the most convenient and feasible, if not the only practicable route for a railroad is believed to exist, and the liberality of the State of Texas, in making generous donations of valuable land in aid of the enterprise.

The case is no longer that of a single community pressing for an avenue through vast tracts of uninhabited wilderness, to a tenantless harbor upon the unpeopled coast, but that of the united longings of two great communities, composed of people of the same blood, race and origin, bound together by a natural tie, and linked in a common destiny, mutually demanding, for purposes of friendship and commerce, the means of a safe and rapid intercommunication. At both ends of this route the thoughts and energies of man are at work. People are finding their way into the rich valleys that intervene, and almost before we are aware of it, communities in the interior, rich in agricultural or mineral wealth, will be requiring the means for those interchanges of the subjects of trade which are so necessary to the continuance and furtherance of a state of civilization. There are those who believe that the undeveloped metallic wealth of the vast region through which such a road must necessarily pass, would of itself amply repay the cost of the avenue, while it is not a matter of doubt that it would prove of a value

totally inestimable to the people who are in future to cultivate the fertile plains and valleys with which it abounds.

The importance of a railroad to the Pacific, to the city of Cincinnati, is great beyond estimate, and the benefit that would accrue from every hundred miles of its extension westward from the Mississippi would be very considerable. It is desirable, therefore, at least, that the people should make themselves acquainted with the circumstances of the case, and become instructed, so far as they have the means, in the nature of the obstacles to be overcome, and the force that can be brought to bear for surmounting them, to the end that the powerful lever of public sentiment may act in the right direction.

#### THE PACIFIC R.R. QUESTION IN CONGRESS.

In the proceedings of the House of Representatives on the 17th inst., as reported in the *Congressional Globe*, we find the following notice of the presentation of petitions:

##### PETITIONS, ETC.

The following petitions, &c., were presented under the rule, and referred to the appropriate committees:

By Mr. CAMPBELL, of Pennsylvania: The memorial of James H. Lipton and 89 others, citizens of Milesburg, Pennsylvania, praying Congress to take such measures as will secure a railroad to the Pacific.

Also, the petition of G. W. Herbert and others, citizens of Pennsylvania, praying Congress to take such measures as will secure the construction of a Pacific Railroad.

By Mr. CARUTHERS: The petition of N. B. Gill for the privilege of being allowed to enter certain lands.

By Mr. PECK. The memorial of Thomas Satterlee, a soldier in the war of 1812, for pension.

Also, the memorial of M. P. Crowell and others, of Leoni, Jackson county, Michigan, for an appropriation in aid of a Pacific railroad.

Also, the memorial of Joseph Blake and others, of Grandville, Kent county, Michigan for the same object.

Also, the memorial of M. Sabin and others, of Livingston county, Michigan, for the same object.

Also, the memorial of H. D. Post and others, of Holland, Ottawa county, Michigan, for the same object.

By Mr. HOFFMAN: The memorial of Lewis Brunner and 68 others, citizens of Frederick county, praying that a pension be granted to J. D. Anaby, of Washington county, Maryland.

By Mr. MOORE: The petition of Mary Gates praying for a pension.

Also, the petition of A. Van Golder and 41 others, citizens of Gallia county, Ohio, praying for the construction of a Pacific railroad.

By Mr. WASHBURNE, of Wisconsin: The petition of citizens of Wisconsin and Michigan, asking for the establishment of a mail route from Ontonagon, Michigan, to Superior, Wisconsin.

Also, the petition of citizens of Wisconsin, asking for the establishment of an additional land office.

By Mr. SPINNER: The remonstrance of C. M. Peck and 52 others, citizens of the State of New York, against the extension of the Woodworth patent for a planing machine.

By Mr. WELLS: A memorial of the State

of Wisconsin for a marine hospital at Milwaukee, Wisconsin.

By Mr. COLFAX: The petition of Hon. M. W. Shields and others, citizens of Indiana, in favor of a Pacific railroad.

By Mr. READY: On behalf of his colleague, [Mr. Etheridge,] who is detained from the House by sickness, by leave, the memorial of John Travis and others, citizens of Tennessee, praying Congress to adopt such measures as will secure the construction of the Pacific railroad.

By Mr. STEWART: The memorial of Thos. Eaton, Andrew S. Carter, and others, citizens of Caroline county, State of Maryland, in favor of a Pacific railroad.

By Mr. SMITH, of Virginia: The petition of E. P. Upton & Co., for a bridge across the Potomac opposite Georgetown.

#### THE PACIFIC RAILROAD.

We propose to discuss in several numbers, a subject at once the most important, and at the same time practical; and this is, shall we have a Railroad to our Pacific coast? We propose to treat this subject under the following different heads;

1st. The necessity of the road to preserve the Union.

2nd To protect ourselves against foreign invasion.

3rd To show that it will be a saving to our country.

4th That it will be a paying road.

5th. That it can be built, and will be built.

1st The road is necessary to preserve the Union.

The History of the past plainly teaches us that people, separated by natural barriers, have ever, in the end, formed to themselves separate Governments. What are the landmarks of England, of France; of Spain, of Russia and the nations of the East? They are Mountains, Seas, or Rivers. When a country becomes so large that intercommunication between its parts is not direct and long delayed; when they are so far removed from the heart of the nation, that they faintly feel its beatings, sooner or later that part will cease to hold its parasitical positions, and will form a government of its own, separate and distinct from the parent.

Was not this alleged to be one of the reasons of our separation from England, that we were so far removed from the supreme Government that we often failed to have justice meted out to us and then long delayed? The same principle is as potent now as it has been in ages past. People must be bound together by artificial as well as natural means. If nature presents obstacles, they must be removed, or their effect vitiated. Nature does present some barriers between the Atlantic and Pacific slopes in extended chains of Mountains and barren deserts; they cannot be removed, therefore we must contrive means to do away with their effect, and this can be done only by easy and direct intercommunication between our seaboard on the East and West, and this can be effected only by a railroad; all other means are too slow, and the Isthmus is not direct. The Government has power to build this road and the constitutional right, by article I, Section 8 and article III, Section 4.

We are liable at any time to have a war with Great Britain. We have no fleets at present to compete with hers, and able to defend our seaboard on account of its great extent. We are weakest on our Pacific coast. All our munitions of war are manufactured in our Atlantic States—our depots are here—our national strength and means of defense are here; the Pacific slope pays its proportion to maintain them, and still in the event of war is left comparatively helpless; a foreign fleet can cut off all intercourse. Will a people, when they see this carelessness quietly submit to it? Will they not, as they become stronger, act upon that law of self preservation, and provide those means themselves. Will they do this and provide for us also. It is more than we can ask; it is more than they will do. But a railroad will avert all this. It will unite still more strongly the different



ports of this rapidly growing Republic, which will in the end become unwieldy, unless we employ those means, that have been placed in our power, to unite and cement its component parts. This fact renders the road absolutely and immediately necessary, for our Western shores are fast filling up, and many of the emigrants are not bound to us either by the ties of language or religion, and it averts all danger by retaining within our borders, the inter-oceanic transit for commerce, gold, and munitions of war—

**ATLANTIC & GULF RAILROAD.**—On Monday last, the Board of Commissioners of the Atlantic and Gulf Rail Road or the main Trunk Rail Road Company, met in Milledgeville, and adopted Resolutions, in substance as follows:

That Books of subscription to the capital stock of the Atlantic and Gulf Railroad Company shall be opened at the following places on Monday the 12th of May, to wit: At Milledgeville, Augusta, Savannah, Columbus, Thomasville, Albany, Troupville, Waresboro, Bainbridge, Brunswick, Magnolia, Macon, Newton, Fort Gaines, Blakely, Atlanta, Morgan, Isabella, and in the counties of Telfair, Appling, Coffee, Irwin, Randolph, and Lee, under the superintendence of certain Commissioners, and to remain open for three months.

As soon as the official proceedings are furnished for publication we shall give them to our readers.

The following gentleman of the board were present at the late session.

Hon. E. A. Nisbet, Dr. J. P. Screven, N. Collier Esq. Hon. W. J. Lawton, Hon. Joel Crawford, Hon. E. C. Anderson, C. J. Munnerlyn, E. R. Young, W. B. Hodgson, Hon. A. H. Colquitt, Hon. James M. Calhoun, Dr. Thomas Hamilton, Hon. James Hamilton Couper, Hon. Chas. Spaulding, Hon. Alexander Atkinson, Maj. Jno. H. Howard, Hon. C. J. Jenkins. —*Georgia Citizen* April 5.

**THE MANUFACTURE OF SALT IN MINNESOTA.**—Among the acts of the Minnesota Legislature at its recent session, was one chartering a company to explore the salt region about the head waters of the James River and on the tributaries of the Red River of the North, and if deemed expedient, to engage in the manufacture of salt. The best authorities put down the area of country abounding in salt springs and lakes, and, in some cases, in crystallized salt, lying partly within the American and partly within the British possessions, at ten thousand square miles. A portion of this area is at a short distance west of the Red River of the North, and a portion of it lies on the Athabasca River, further westward. From specimens of salt obtained by solar evaporation from the springs and lakes of the first-named district, there is left no room for doubt as to quality, and there is no good reason that we know of why it cannot be manufactured cheaply and in large quantities. The Selkirk settlement is supplied with salt from this source, besides furnishing supplies to the posts of the Hudson Bay Company on Winnipeg, Rainy Lake River, Lake of the Woods, and the Saskatchewan River. James River is a considerable tributary of the Missouri River, running northward nearly to the 48th parallel, and will furnish the means of shipping salt to the settlements below, and as far down the Valley of the Mississippi as may be desirable. It will also be remembered that a charter for the North Pacific Railroad was obtained at the last session of the Minnesota Legislature, which road will, without doubt, pass directly through the salt district. It is not improbable that, within a very short time, large quantities of salt will make their way to the lower markets from the district in question.

#### SOUTHERN PACIFIC, OR,

#### Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14. 106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON.....ASSOCIATE EDITORS.  
T. WRIGHTSON.....

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads, Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, MONDAY, MAY 5, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, ..... MONDAY, MAY 5.

### THE NECESSITY OF A PACIFIC RAILROAD— RECENT EVENTS.

Events have recently transpired which prove the necessity of a Pacific Inland Railroad, as much as such a necessity can possibly be proved. The commercial public have contrived, and actually executed two great commercial highways, between the Atlantic and the Pacific, which diminished the time required for the voyage to one-fourth the former period. One of these was by the Isthmus of Panama, which was so crowded as to afford immense profits to the owners of the steamboat lines, and has resulted in the construction of a railroad across the Isthmus. The shares in this railroad have also risen to a point much above par.

This line was so profitable that it resulted in the establishment of a second through the State of Nicaragua. This line, by means of a short portage, the lake of Nicaragua and San Juan river, also made a rapid and commodious line of transit. Both these lines were speedy and convenient, and so popular that immense numbers of passengers have passed over both, and the proprietors of each have become immensely wealthy. Both were deemed entirely safe, except from the malaria of the country, which, we may here remark was a serious drawback. No interruption on these routes was anticipated, and dangers from internal convulsion or hostile array were never dreamed of.

Now mark the consequences of this confidence in a foreign route! First, we find a year or two since, the Nicaragua Transit Company suspected, at least, of being involved in the Greytown affair. Passing that by, a few months since we find the buccaneering expedition of Walker commenced, and no sooner commenced than the Transit Company in some way mixed up with political affairs there. Soon after the Company's ships are seized by the United States, District Attorney, for being engaged in carrying filibusters. Then we find the San Juan communication all cut off. Walker forbids any passenger to go without a *pass*. Mora kills, and threatens to kill all! A ship load of unfortunate passengers arrive, and part return to New York, and part at the hazard of of their lives, attempt to cross! In fine, the

NO. 12.

Nicaragua line is for the present broken up. If we turn our eyes to Panama, we are startled with frightful murders and massacres. A large company of passengers on board a regular steamer, landing at Panama, are beset by the barbarians of the country, and *sixty massacred*, besides the robbery of a great sum of money! Here are two great highways across Central America interrupted, the lives of passengers taken, the others threatened with immediate death, robbery and ill-treatment of every sort committed, and in one word these routes *have ceased to be safe for any other than armed men*; and come what may, the United States must submit to these outrages, or make a road for themselves on their own territory. The last is the sensible course, and that result is, at some time, inevitable.

But some persons may say these are only casual outbreaks. They may not occur in a long time. This is a great mistake. They belong to the very nature and constitution of the country, and the only wonder is that they have not occurred more frequently.

We say this result is inevitable. For look at the nature of its population. Some years since New Grenada, where the Panama Railroad is situated, contained about the following population:

|                                |           |
|--------------------------------|-----------|
| Spanish Creoles.....           | 250,000   |
| Free Colored people about..... | 500,000   |
| Indians.....                   | 1,250,000 |
| Total.....                     | 2,000,000 |

The Indian population were made effeminate by the climate; the Spanish Creoles nearly as much so; the blacks alone are native to the climate, and become strong and hardy in the climate. These are numerous, and it is this class, we are told, committed the massacre at Panama. The small infusion of whites which are, or ever can be made in Nicaragua, New Grenada, or any of those States, will be utterly unable to control the native population. It is said that in the late outbreak at Panama, when the police were called out, they sided with the blacks. This they did, probably, to save their own lives. That country may be overrun by a few white men; but they *cannot control the native population* so as to prevent such insurrections as we have seen there.

The Government of the United States will doubtless demand and secure reparation for the late outrages; but what will that do for the future? So long as the population of Central America is composed as it is, it will commit outrages, violence, robbery and massacres. It is an irresponsible population to either moral or military means. If we go so far as to suppose the United States will seize

the whole country, what of that? Will that change the people? Will they keep a great standing army there to quell negroes and Indians? Such an army will cost a Pacific Railroad to maintain it a single year. Disease in a tropical climate will cut half of it down in a single year. Is it worth while to waste American life and money in such an enterprise? It is palpable that our best plan is to project and carry forward immediately a great American Railroad, from the Western termination (say the Mississippi River) of the present railroad system to the Atlantic. Let our people roll over the continent in six days, as they easily may do, and concentrate within themselves their empire and their strength. Let them hold all that is valuable of this vast American continent, and that lies altogether in the temperate zone, and whether the British hold the frozen Arctics, or the blacks and Indians the tropics, is a matter of no consequence to us. We shall hold all that is good; consolidate it into the greatest dominion of the earth; hold others tributary to ourselves, and contribute in our turn to the happiness and welfare of all nations.

### IMPROVEMENT OF THE OHIO.

BY CHARLES ELLET, JR., CIVIL ENGINEER.

BURNET HOUSE,  
Cincinnati, April 30, 1856. }

Two plans are proposed for the improvement of the navigation of the Ohio River.

The first of these is my own proposition, to form RESERVOIRS on the tributaries of the river, in which water will be collected when the drainage of the country is in excess, and from which the channel will be supplied when the navigation fails, in times of drought.

The other is the plan of LOCKS AND DAMS—the advocates of which propose to construct about fifty dams across the river, to increase the depth of the water, and to place two locks in each dam, to overcome the obstructions created by the dams themselves.

I have recommended the formation of reservoirs on the tributaries of the river, and objected to the construction of these dams across the channel of the river, for the following reasons:

1. After the dams shall have been constructed across the Ohio, it will be found that *they cannot be made water-tight*. The dams will leak, and reservoirs on the tributary streams will be needed in the summer season, to supply the pools themselves with sufficient water to float the boats.

This point is illustrated by the slackwater navigation on the Schuylkill River, where *three reservoirs* are now required, and are resorted to annually, to supply water to compensate for the



losses resulting from the evaporation, and from the leakage and lockage at the dams.

It is illustrated, also, by many other slack-water improvements; but more particularly by that of the Monongahela River, where, during the greater part of the summer and fall of 1854, the water not only ceased to run over the dams, but, by evaporation and leakage, was almost literally dried out of the pools.

The Monongahela Company now contemplate resorting to "immense reservoirs," from which a supply can be drawn, in seasons of low water, into their lower pools, and thus keep them in good navigable condition.

They now have a lock and dam improvement, but find that they still need *reservoirs* to supply that improvement with water, and make the dams useful.

Instead of building dams to obstruct the navigation of the Ohio, and locks to overcome the artificial obstructions occasioned by the dams, and reservoirs in the mountains, from which to supply the pools with water, I propose to form the reservoirs in the first instance, and to supply the river itself from them, at once, and dispense entirely with the locks and dams. It will require much less water to supply the river in its natural condition, than will be needed to supply it after its channel has been obstructed by leaky dams, and a wider surface has been exposed to the sun and air, and the evaporation thereby increased.

II. *Locks and dams will set a limit to the amount of freight which can be transported on the river.* The plan which I propose—that of supplying the river with water in times of drought—will leave its capacity for conveying freight, for all practical purposes, absolutely unlimited.

After these dams have been built, the number of boats which may traverse the river will no longer be determined by the quantities of produce, minerals, or lumber, that the region of which the Ohio is the great highway, is capable of producing, or which its markets may demand, but they will be limited to the number that may be passed through the locks.

The inability of double locks to pass the trade of the Ohio, is fully demonstrated by the Monongahela navigation, where the coal-boats occasionally crowd by *hundreds* to the locks; and, in the haste and anxiety to get through, block up the approaches against all ascending craft, for several days in succession.

There are only five or six steamboats plying on the Monongahela, and requiring the use of its locks; but the improvement of the Ohio, to be tolerated, must be such as may be relied on to accommodate not only the present and prospective coal trade of the Monongahela, but also the lumber trade of the Allegheny; the iron and miscellaneous trade of Pittsburgh; several hundred Ohio River steamboats, and the proper trade of the Ohio River itself. This vast aggregate could not be passed through double locks, even if a set of double locks could always be kept in good working order.

But we cannot hope to have two locks at each of the fifty dams—exposed as they must be to injury from boats and from floods—always in

order, unless we provide at least *three locks* in each dam.

III. The delays at the locks will be greater than the running time now required to make the trip; and, consequently, the time now required for every ordinary voyage will be *more than doubled* by the detention at the dams.

If reservoirs are adopted, and water supplied by them to the channel, when it is needed there, the time required to make the trip will be reduced.

IV. If dams are placed across the channel of the Ohio, all the trade of the river, for not less than fifty weeks in every year, will be forced through the locks.

Careful and recorded observations, made at Wheeling, for twelve years in succession, show that the water would not be high enough for boats to go safely over the dams, on an average, fourteen days in the year.

V. If the navigation is improved by reservoirs, no interest can possibly be injured thereby. If the channel is obstructed by dams, the rafting business will be completely destroyed.

VI. Dams on the Ohio, however skillfully they may be planned by the engineer, and however faithfully built by the contractors, will sometimes prove to be imperfect. Resting often on treacherous foundations, some of them will be injured by the ice, and some will be undermined by the floods. This has been the experience wherever numerous dams have been built on the same stream. Such misfortunes have occurred on the Lehigh, on the Schuylkill, on the Potomac, on James River, and on the Monongahela. They may occur also on the Ohio.

When one of the well-built dams on the Monongahela gave way, in 1842, the bottom of the river was washed out to a depth of 40 feet. One year was lost in consequence of the continued high water, and when, in the second year after the breach was formed, the water fell so that the work of reparation could be commenced, it required *four months* for the most skilful and energetic men to close the gap and secure the dam.

What, I ask, would be the condition of things if one of the fifty dams which it is so lightly proposed to construct on the Ohio, should be washed away, or undermined, and the navigation there suspended for four months?

If we resort to reservoirs for the improvement of the navigation, no damage can result to the trade of the Ohio from a derangement or breach of any part of the works.

VII. Dams will obstruct the navigation, and cause the boats to crowd and jam against the entrance of the locks. These boats will sometimes be sunk—as has happened on the Monongahela improvement, and indeed on every canal in the country—and stop the navigation until they can be removed. A pair of coal-boats will contain a thousand tons, or more; and the removal of so great a mass, from under water, will be a slow and tedious job.

If the river is fed from reservoirs, the channel will be kept always clear, and there can consequently be no jamming of boats. If a boat

sinks, there will be room in the channel for other boats to pass by it.

VIII. If locks and dams are adopted, steamboats will sometimes be driven carelessly against the works, and stove in the gates. This occurs frequently on canals, and has occurred on the Monongahela, though but few steamboats run there. In this one instance, a new pair of gates happened to be ready, and the navigation was restored, by the great skill and energy of the President of the Company, in four days.

If the navigation of the Ohio should be stopped for only *four days*, some seventy or eighty steamboats would collect above and below the locks, and, at some seasons of the year, in that space of time, from 500 to 1000 coal-boats, flat-boats, and rafts, in addition to the steamers, would be arrested there.

The collection, in the space of only a few days, would sometimes be so great, on that river, that its whole channel would be filled entirely across, from bank to bank, to the distance of two or three, and, at times, even to the distance of five miles from the locks. On the canals of this country, we have often witnessed such sights, on a smaller scale. In one instance, *seven miles of canal boats* blocked up the entire breadth of the Erie Canal, before the breach which stopped their progress could be repaired. But the boats and locks of a canal are of manageable dimensions, and nearly three hundred boats can be let through a well appointed lock in a day. A pair of coal boats, or a raft, would occupy the huge locks which will be required to pass the Ohio river steamboats, more than an hour. It is indeed very doubtful whether a raft which would fill one of these locks, and cover therefore more than half an acre of surface, could be let through and got out of the way in less than *three hours*. But, assuming that the average time for a pair of coal boats or a raft, would be an hour, to pass 500 of them through a single lock, working day and night, would consume at least *ten days*, and during that ten days, at certain seasons of the year, as many more would approach and struggle to get through, as the way might be cleared for them. Small, comparatively, as is the present trade of the Monongahela, and rapidly as the smaller locks there required can be worked, the descending coal flats frequently shut off the navigation for ascending steamers on that river for three or four days in succession.

IX. The cost of the fifty dams and one hundred locks which it is proposed to build on the Ohio, deduced from the ascertained cost of the Monongahela Improvement,—with a proper allowance for the increased length of the dams, the increased length, width and height of the locks, and the increased value of labor and materials since that work was completed, twelve years ago,—would be about *twenty-five millions of dollars*.

The cost of procuring a five feet navigation by means of *reservoirs* on the tributaries, ought not to exceed *two millions* of dollars.

Is it better to expend twenty-five millions and obstruct the channel of the Ohio by fifty dams, during nine months of the year, when the navigation is perfect, or to pay *two millions*



to remove the obstructions caused by low water during three months of drouth?

x. Almost every city on the Ohio is built in part on soil subject to be overflowed. The construction of dams below these cities will increase the heights of the floods, and the depths and the frequency of the overflows.

Dams in the mountains may be placed where no valuable property will be covered by the reservoirs, and they cannot fail, by retaining a portion of the surplus water, to reduce, instead of increasing, the height and destructive power of the floods on the river.

xi. Dams across the Ohio, will set the water up into the mouths of all the tributaries, great and small, which empty into its channel. On these tributaries are valuable mills and mill privileges, which will be submerged, even in low water, and destroyed by the dams.

The reservoirs in the mountains will destroy no mills or water power, but, on the contrary, they will create vast and never failing water power wherever the dams which form the reservoirs are placed.

xii. The advocates of locks and dams cannot be opposed to reservoirs, nor deny the practicability of obtaining water enough by that means to feed the Ohio. They cannot take this ground, for every dam they propose to build will form a reservoir of immense size, but one which is not available, because it is in the wrong place. The fifty dams which they propose to raise on the Ohio, will form reservoirs in the river itself, covering, in the aggregate, a space of over *four hundred square miles*, and holding three times as much water as would be needed, if they were placed where they ought to be, in the mountains, to afford a five feet navigation, the year round, from Pittsburg to Cairo.

To avoid forming reservoirs in the mountains, where they will do great good, they propose to make pools in the river, where they will do great harm. These pools in the river will contain fully three times as much water as need be discharged from the mountains to support the navigation throughout the summer. And, after the pools are made in the river, and the navigation has been destroyed by the dams that form them, great reservoirs in the mountains will still be required to supply these pools with water.

Is it not better, I ask, to make the reservoirs in the mountains at once, and dispense with the pools in the river altogether?

xiii. The dams which it is proposed to construct on the Ohio, will convert the channel of that river into fifty stagnant and pestilential ponds, endangering the healthfulness and diminishing the population of its valley.

High dams in the mountains will form deep lakes in the rock-bound gorges. These lakes will be filled with cool water in the winter and spring. This water will retain its coolness until it is needed for the navigation, and then gush forth in refreshing torrents, which will temper the heats of midsummer on the immediate borders of the river.

The locks and dams will destroy the navigation of the river when it is in the best condition,

and impair the healthfulness of its shores when they are the least salubrious.

The reservoirs in the mountains will improve the navigation when it most needs improvement, give motion to the river when its waters are stagnant, supply the cities on its banks with a more wholesome beverage, and wash out, as far as fresh water can do that work, the causes of malaria.

I object, therefore, to locks and dams on the Ohio. I object to them because the river can be improved by a plan which will leave its channel unimpaired and unobstructed; which will improve the navigation of its tributaries, while it improves that of the river itself; which will tend to diminish the height and destruction produced by the floods, while it increases the depth of the channel in seasons of drouth. Which will create immense water power in the mountains, without destroying the water power near the river. Which will pour a healthful current of cool water into the channel from the reservoirs in the mountains, instead of converting its living stream into putrid pools. Which can be used to carry away the ice that obstructs the navigation in the winter, while it overcomes the effect of drouth in the summer. Which will improve the health, while it increases the wealth of the country. Which will do some good to every interest, and injure none.

This is the plan which I offer as a substitute for locks and dams on the Ohio.

It is not a speculative plan. It is based on careful measurements of the volume of water flowing down the Ohio, day by day, and every day, for a period of six years. It is the conclusion which results from minute, laborious and appropriate investigations.

This plan, and the facts on which it rests, have been given to the public in a work which has received the approbation and concurrence of scientific minds throughout the country.\*

Is it not, then, worthy the attention of that great community of business men which has put the locomotive in motion on the mountain tops, and filled the navigable rivers of the West with magnificent steamers?

I have done my share of the work. I have projected the plan. I have measured the discharge of the river. I have demonstrated the practicability of the scheme, without aid or encouragement, and I ask now only that they who are to be the most benefitted by the work shall assist in its execution.

Instead of any elaborate article of our own, we are pleased to give our readers one more valuable, in the foregoing discussion of the Improvement of the Ohio River, by Mr. CHARLES ELLET, Civil Engineer.

In an early number of the *Record*, we noticed at some length the very able work of Mr. Ellet on the Mississippi and Ohio Rivers. It was one of those accurate and enlightened investigations of a difficult problem in physics, which only an able and well instructed man of science could make. All the elements of the Ohio river, such as the quantity, depth, and distribution of

water, necessary to the solution of the problem, were carefully ascertained; and the results commended themselves to our mind with the precision and certainty of truth. We thought then, and do now, that Mr. Ellet's plan was not only practical and cheap, but was the only one which promised success. With this conviction, we lay before our readers Mr. Ellet's interesting communication.—*Ed. Rec.*

#### BEAUFORT HARBOR.

YEMASSEE BLUFF, POCOTALIGO,  
January 14, 1856.

Sir:—During the last summer I wrote several articles for the *Charleston Mercury*, over the signature of "Beaufort," in which I endeavored to show the advantage that the Harbor of Port Royal possessed as a Southern commercial mart. Most of the statements in those publications were from observations made by myself, and were derived from my own knowledge of the locality. Through the courtesy of Prof. A. D. Bache, Superintendent of the Coast Survey, I have been placed in possession of the chart of this harbor, with the report of Lieut. J. N. Maffit thereon. This report sustains me altogether in the statements I advanced, and shows, beyond all cavil, that this harbor of Port Royal is by far the best and safest "south of the Chesapeake rivaling New-York herself in the capacity of anchorage, and in the depth of her bar."

As this statement of its capacity comes directly from the officials of the Government, and as you are the representative in Congress of the district and people, who are to derive more immediately the advantages to be hoped for from the possession of so eligible a maritime position, I claim your attention.

"U. S. S. CRAWFORD,  
Hampton Roads, Nov. 18, 1855."

Sir:—Port Royal Bar, or by its more familiar name, "Martin's Industry," lies in latitude 32° 4' 46" N., longitude 80° 30' 27" W. It consists of an area of broken ground 6,800 yards in circumference. It is formed of coarse sand intermixed with dead marine shells. Seven feet at mean low water, which would give less than five feet at the fall and change, is the least that I could find.

This dangerous and much dreaded shoal bears from Tybee Light W. 17° S. distant 16 miles; from Bay Point, on the east entrance of Port Royal Sound, N. 18° W. distant 10½ miles; from Head Bluff N. 31° W. distant 9 miles.

Until its locality was marked by the Light Boat, which is now moored in 7½ fathoms, three-fourths of a mile seaward of it, many wrecks occurred by vessels standing boldly in to make the land when bound to Savannah. Within the last few years several vessels of very great value have been lost in this vicinity, having been caught on a lee shore in heavy weather. I have been credibly informed, that in several instances a reliable chart of the bar, with two buoys in the South

\*See *Ellet on the Mississippi and Ohio Rivers*.



channel, would have enabled the unfortunate commanders to save their vessels.

To the northward and eastward of "Martin's Industry," there is a channel 900 metres in width, with 17 feet at mean low water, with two buoys; this channel would be of great service to vessels coming from the northward, and as the mean rise and fall is 7 feet, merchant vessels of the heaviest draught could enter at half-tide.

To the southward and westward of "Martin's Industry," is the South channel, and being the deepest and widest, may be termed the main ship channel of Port Royal entrance. It is 1,200 metres wide, and has 19 feet at mean low water. The following results were obtained from the tidal observations made during the progress of the work, viz:

|                           |           |
|---------------------------|-----------|
| Mean rise and fall.....   | 7.20 feet |
| Spring rise and fall..... | 9.00 feet |
| Neap rise and fall.....   | 5.00 feet |

The tides are very much increased by E. N. E. and N. E. winds, and decreased upon the bar by N. W. winds.

When this channel shall be properly buoyed and supplied with such beacons as might be deemed necessary, it will be easy of access in all winds except N. W.; and when once over the bars, the up channel way is clear and deep with the best of holding ground, and the anchorage inside the bar is protected from N. E. by the long spit trending seaward, called "Cole's Care," and from the southward and westward by the prolongation of Joyner's Bank.

Broad River, which empties into Port Royal Sound, has a wide channel with an average of five fathoms as high up as the N. E. branch, a distance of 29½ miles.

Beaufort River, also a tributary of Port Royal Sound, affords 18 feet at mean low water, until within three miles of the City of Beaufort; from thence up, 14 feet at mean low water is the least that can be found in the channel.

The commercial facilities of this harbor are unrivalled, and their developments will be fully exhibited by the progress of the Coast Survey.

As time and opportunity permitted only of a hydrographic reconnoissance, I do not feel at liberty to discuss the merits of the harbor on any point beyond its mere mercantile facilities.

In consequence of the great distance of the land, and absence of all facilities, I have not deemed it expedient to prepare sailing directions for the sketch, as all the courses would depend entirely upon the compass—by no means reliable in such a strong current; and the broken nature of the ground would tend much to confuse a stranger.

The tidal currents on the flood, average 1.5 mile per hour, in the South and East Channels, the direction being controlled by the Shoals on either hand. On "Martin's Industry," the current sets N. W. 8 of a mile per

hour; the velocity of the current increases as you approach the mouth of Port Royal Sound, where it has an average of 2.5 miles per hour. The ebb current has an average velocity over the flood of 6 of a mile per hour.

|                        |      |
|------------------------|------|
| Duration of flood..... | 6.05 |
| Do ebb.....            | 6.03 |
| Do slack.....          | 0.25 |

Very respectfully, yours,

J. N. MAFFIT.

*Lieutenant Commissioning, U. S. N.,  
Assistant Coast Survey.*

PROF. A. D. BACHE,  
*Sup't U. S. Coast Survey.*

You will perceive, Sir, from the report above, that any ship not drawing over twenty feet water can reach the wharves at the present location at Beaufort, and that a few miles below affords depth enough to float any thing that is likely to be needed for commercial purposes. In one of the articles I have already published, I have shown the probability and the feasibility by which the town of Beaufort will extend itself down towards the sea.

The first step towards the development of the advantages of the port is, that the Government would show its appreciation of its importance by placing buoys upon its waters, and erecting light-houses upon its shores. The next step should be the establishment of a naval station and dock-yard. Cast your eye over the map of North-America, and you will see at once that it is the key to the Gulf of Mexico.

*The establishment of the fact of the capacity of the Port Royal*, will show it in a new light to the commercial community; and I feel that in calling your attention to the subject, I shall enlist your warmest sympathies, and your untiring efforts for the full development of all the benefits that are to be derived from it.

This communication is already so long, that I am anxious to close. Before doing so, I will call your attention to a few facts, which will illustrate my whole scheme.

Taking the establishment of deep water at Beaufort, as the basis of operations, I will show its facility of access to the Great West. Beaufort is sixty miles from Savannah, and is approached at all time by a safe, deep, inland navigation. An outlet in this way, even at the present time, would give abundant employment to all the schemes of internal improvement that have been accomplished, and that are now in progress, by the enterprise of the citizens of Savannah, and the completion of the Charleston and Savannah Railroad will make the time and space much less. A Railroad from Beaufort of 17 miles will reach Pocolaligo, a station on the Charleston and Savannah Railroad; fifty miles further will reach Barnwell Court House, and an addition of 30 miles will reach Aiken—100 miles in all. This whole distance will be accomplished with the passage of a single stream, a shallow arm of the sea, of 600 yards in width, at Rest

Park, nine miles from Beaufort; a Branch Road from Pocolaligo to George's Station, on the South Carolina Road, through Walterboro', or from Barnwell to Branchville, will make the Columbia and Camden branches, with all their tributaries, accessible to Beaufort.

In my communications to the *Mercury* the last summer, I speculated upon the 33d degree of North latitude as the most feasible route for the great Pacific Railroad, to terminate at San Diego. Since that time the Secretary of War has assumed the 32d degree North as the basis of the most eligible site; and upon this identical degree the port of Beaufort is situated upon the Atlantic. By referring to the map, you will see that San Diego, from Beaufort, is the shortest route from the North Pacific to the North Atlantic oceans. If you take a lower route, you will encounter the Gulf of California on the one hand, and the Gulf of Mexico and the Bahama Channel on the other.

It is of great importance to the whole Union, and it is of especial importance to the South, that this harbor of Port Royal should be brought into notice; and as your position as Representative gives you the opportunity of initiating it into the public mind, I leave the subject to your attention, satisfied that you will give it your earnest effort.

Very respectfully,

GEORGE P. ELLIOTT.

#### NAVIGABILITY OF THE MISSOURI.

##### CONCLUDED.

On the sixth we passed, in the afternoon, the mouth of the Poplar, a clear stream about sixty yards wide at its mouth. Just opposite was the dry bed of a stream about eighty yards wide, and now called "Little Dry" creek. It was, I believe, named by Lewis and Clark "Two Thousand Miles" creek. Several extensive prairies are seen in this vicinity, particularly on the right bank, which produced nothing but wild sage.

About seven miles above the mouth of the Poplar, there were encountered difficulties from sand-bars similar to those met with at Fort Union. I think they could have been overcome. But the managers of the boat thought best to return from this point. They accordingly had carried ashore the Fort Benton freight, which was to be conveyed to that post by cordelling a large keel-boat. We returned to Fort Union on the ninth. No material obstructions were met with in our descent. The steamboat traveled with nearly three times the speed she did when ascending.

We had an opportunity of verifying the survey of this portion of the river. It was found that the courses and features of the country were pretty accurately laid down, while the estimates of distances were somewhat erroneous. Wood appeared to be more abundant from Fort Berthold to the mouth of the Poplar than on any part of the river above the mouth of the Platte. I noted several different kinds of cotton-wood and willow. In traveling over so extensive a region from south to north, it was to be expected that



changes would take place in the growth. I believe most of the trees which grow in southern latitudes disappear from the banks of the river south of the northern boundary of Missouri. The last sycamores to be seen in ascending were, I was informed, at the first bend above the "Mormon Winter Quarters." In high water, the greater part of the banks of the Missouri may be thus described: They are from two to twenty feet high, vertical, and, in horizontal projection would be zigzag lines, in consequence of the earth continually falling into the water at numerous points. In low water, I was informed, these banks often have at their base a pebbly or rocky beach, inclining to the water's edge, and being from ten to forty feet wide.

After the Yellowstone, the principal tributaries of the upper portion of the river are the Moreau, the Cannon Ball, and the Shayenne; they are only navigable for canoes or buffalo-boats.

The following general facts were principally furnished me by persons who appeared to be well acquainted with the Missouri:

However difficult to find it, there is always a good channel in the river. In consequence of the diminished effects of the current, the channel, though not so deep, is less changeable, and more safe for navigation by steamboats of light draught in low than in high water.

As steamboats descending the river proceed with nearly treble the speed they would have in ascending, they find in sand-bars a much more formidable obstacle in the former than in the latter case; it is often necessary to unload in part before they can be relieved after encountering the bar in descending.

Along that portion of the river where it flows through the great prairies, the frequency of storms, generally from the northwest, is a very serious impediment to the navigation. This was found to be true during the voyage of our steamboat, except that the storms were not generally from the northwest.

The Missouri is affected by two annual floods, which greatly facilitate navigation by the larger steamboats. The first and lesser flood is caused by the melting of the snows on the prairies, and generally takes place in May; the second arises from the melting of the mountain snows, and occurs in June. Steamboats, heavily freighted, and bound for the Yellowstone, should leave St. Louis about the middle of April, in order to have the full benefit of the June rise. The river above Council Bluffs City is closed by ice from about the middle of November to the first of April.

It is thought that steamboats could, were it not for the ice, ascend to the mouth of Milk river throughout the year; this being the highest point to which the navigation has heretofore been carried.

I believe the voyage of the "Robert Campbell" in 1853, forty-two days ascending to Fort Union, and about seventeen days descending thence to St. Louis, may be taken as an average trip. But it appears to me that there exist almost certain means of reducing the time of ascent at least one-third, and possibly one-half. The same steamboat can easily perform in one season two trips to Fort Union and back.

With reference to the improvements that might be made of the Missouri, my information was not of the character to enable me to estimate their cost, or to say where or in what manner, they should be applied. For that purpose a more detailed survey should be made,

and the person having charge of such should become acquainted with every portion of the river at all stages and seasons.

It occurs to me that it would be highly advantageous to adopt some system for maintaining a knowledge of the river at all points; and for this purpose, to establish posts of observation, at which competent persons should ascertain and keep an account of all information bearing on the subject of the navigation. A telegraph along the banks of the river, besides being valuable in other respects, would, it seems to me, be very useful for the transmission of that information from post to post; and steamboats in passing could thus communicate, for the benefit of those behind them, the state of the river above or below the posts of observation. Most of the obstructions in this river, I think, are of such a character that it will be necessary to remove them every two or three years. An engineer, or board of engineers, should be appointed, whose duty should consist in reporting, from time to time, to the people, merchants, or state legislatures interested, or to Congress, what obstructions should be removed; furnishing estimates, and stating in what manner the work should be done, as well as in superintending all arrangements made to facilitate the navigation.

Any system which might be adopted should, of course, bear a proper relation to the importance of the objects to be attained, and to the interests concerned.

If I am not mistaken, the merchants in some of our large seaport towns have systems analogous to the above for securing the safety of their vessels and goods.

By the adoption of some such arrangement as I have mentioned, it appears to me that the prosperity of the Missouri might be greatly enhanced, and its importance developed as part of a line of communication from the heart of the Mississippi to that of the Columbia, and to Puget Sound. In your instructions to me, you remarked that the principal object of the survey of the Missouri was to ascertain the reliance to be placed upon it for the transportation of supplies for the construction of the proposed northern Pacific Railroad. The extent to which it may be relied upon may be judged of by combining with what is known of it the prices of labor and supplies at its lower depot or depots, and then comparing it with the other means of transportation, which are likely to come into competition; these are, transportation from the Mississippi by wagons, and that from the same by the railroad itself. Into this discussion or comparison it is not my province to enter.

Your instructions required me to report as to the kind of steamboat which should be used for a future detailed survey of the river. I came to the conclusion that it should be a high-pressure western river steamboat, of as light draught as practicable, so made as to obey very quickly the rudder, and equipped with powerful engines. The upper wood-work should have as little elevation above the hull as would be consistent with convenience and with the space required for the machinery. I almost inclined to the opinion that the usual second story should be dispensed with, if it were found possible to place elsewhere the cabin accommodations.

In concluding the report upon the Missouri, I have to express my regret at the incompleteness of the survey. The members of the party of which I had charge were but passengers on the steamboat, who made the best use

of the time and facilities at their command to fulfil the duties indicated in their orders.

Your instructions required that, on arriving at Fort Union, I should reconnoitre the country in the vicinity of that post.

Preparations were accordingly made on the 9th, 10th, and 11th of July, by procuring the necessary horses and saddles, preparing a wagon, &c. The party consisted besides myself, of Lieut. Mullan, Mr. Graham, five of the sappers, and four employes. One of the sappers, artificer White, I left at the fort to keep up a series of meteorological observations, and to take care of the provisions and other stores in depot for the use of the survey.

We started on the morning of the 12th, traveled nearly north-northeast to the Grand Coteau and a point near the head of the White Earth; then nearly south-southeast until we struck that stream; then down it for some miles, and then back to Fort Union; the entire distance traveled being two hundred and thirty-five miles. We had no barometer.

The following is a general description of the country passed over:

The country between the Big Muddy and White Earth rivers may be characterized as being a vast plain, destitute of timber, and covered with boulders and pebbles of granite, mountain limestone, &c., broken towards the north by innumerable hillocks, the depressions between which are occupied by ponds and lakes, and intersected towards the south by valleys, through which flow the tributaries of the Missouri.

The smaller of these streams, and the Big Muddy, take their rise south of the parallel of 48° 38', while the Miry and White Earth have theirs not far from the foot of Grand Coteau.

The summit of this range, where we struck it, was in latitude 48° 45' 46", and its general direction was, as I had been informed, a little to the north of west. When we were about six miles to the south of Coteau, it appeared like a "distant shore," which sloped at an angle of about 30°, and whose height was about one hundred feet; but the ascent of it was so gradual, that when we were passing from the foot of the summit, we could not perceive that we were ascending.

All the streams which have been mentioned are very small, and can never be of any value for navigation. They are liable, particularly the White Earth, to very high freshets.

Connecting with the bluffs which limit the valley of the Missouri at Fort Union is a low ridge, which pursues a north northwesterly course to about the parallel of 48° 38' and thence runs to the northeast, and becomes merged into the Grand Coteau.

This ridge divides the waters which flow into the Missouri above Fort Union from those which enter below. Where it turns to the northeast, there is a wide valley, through which flows a small stream connecting a series of ponds, marshes and lake. This valley, from having been parallel, to the ridge, turns to the west and continues in a direction towards the Big Muddy river.

About thirty-two miles north-northwest of Fort Union is a chain of sand-hills, covered with a thick growth of small willow. These very much resemble what are called "moraines." I noticed near the head of the Miry river an extensive outcrop of lignite, similar to that seen on the Missouri.

I have to transmit herewith an itinerary of the country we passed over, a copy of the



meteorological observations, and profile of the Missouri.

The map which I wish to accompany this report is principally made up of Nicollet's map below Fort Pierre, and of Lewis and Clark's above that point, with some of our own observations added to them.

Of the collections made by the party on the Missouri and in the vicinity of Fort Union, those in the department of geology were directed to Dr. Evans, and sent to St. Louis, and those in the departments of natural history and botany to Prof. Baird, and sent to Washington.

#### PACIFIC RAILROAD—VIEW OF THE QUESTION IN 1849.

We continue to-day some extracts from the interesting report of the Hon. Jno. A. Rockwell, to the United States Senate in 1849. The prophecies of that report respecting the development of Upper California, have already been more than realized. It is not too much to say there is yet in store for California, a future development which shall surpass its wonderful growth. Let this Pacific Railroad be but built, and the world has never yet seen an instance of the wonderful commercial and mineral developments that will follow with lightning rapidity in its train.

The following extracts are from a paper embodied in the same report, by Robert Mills, Esq., of Washington.

And with regard to that section of country lying between the Mississippi and Rio del Norte valleys, we have many accounts of trails favorable to our road; and recently Lieutenant Burford, of the United States Dragoons, left Fort Smith, with his command, by the Canadian trail, and without the least difficulty, and in a very short time reached Santa Fe, reporting the route he traveled as the best and shortest from the States to Santa Fe, California and Oregon. A late writer thus speaks of the route according to the testimony of gentlemen acquainted with all the localities, and who speak from personal examinations of the entire country.

"The distance from the head of steamboat navigation on the Arkansas, to Santa Fe, is less by about three hundred miles, than from Independence to Santa Fe. From the early opening of the spring, in the late trade of the southern route, caravans are enabled to start from a month to six weeks earlier than on the north route. The route runs mainly between the forks of the Canadian river, on the dividing ridge, which is as level as could be desired, and abounds with springs the entire distance.

"The discovery of coal which has lately been made on this route, promises favorable for a rich supply; the shaft already sunk proving a thick bed, and extending over a large area."

At some suitable point of the main stem of this road, before reaching San Diego, a branch road lets off to San Francisco. That point, assumed on the map, is at the crossing of the Sierra Nevada, dividing the waters falling into the Pacific and Gulf of California, an elevated point, which may be necessary to enter the valley of San Joaquin, descends all the way to San Francisco Bay. "A canal can easily be cut (says Mr. Farnham, who traveled through this country,) from the head of steam-

boat navigation, on the San Joaquin, to the head water of the Gulf of California. This, for commercial and warlike purposes, would be invaluable;" and, in passing down the same, a branch road may lead through some gorge in the high land west to Monterey; thus would all the important harbors on this section of the coast of the Pacific be reached. It is probable that the route of the Gila will be found the most advantageous line for a railroad even to the Bay of San Francisco, by means of the San Joaquin valley, rather than by the Great Salt basin and Sacramento valley, 7° or 8° further north. The valley of San Joaquin is about 300 miles long, and 60 broad, between the slopes of the Coast mountain and Sierra Nevada, with a general elevation of only a few hundred feet above the level of the sea. It presents a variety of soil, from dry and unproductive to well watered and luxuriantly fertile. The eastern (which is the fertile) side of the valley is intersected with numerous streams, forming large and very beautiful bottoms of fertile land, wooded principally with white oaks, (*quercus longiglance*, *Tor.* and *Frem.*) in open groves of handsome trees, often five or six feet in diameter, and sixty to eighty feet high. Only the larger streams, which are fifty to one hundred and fifty yards wide, and drain the upper part of the mountains, pass entirely across the valley, forming the Tulare lakes and the San Joaquin river, which, in the rainy season, make a continuous stream from the head of the valley to the bay. The foot hills of Sierra Nevada, which limit the valley, make a woodland country, diversified with undulating grounds and pretty valleys, and watered with small streams which reach only a few miles beyond the hills, the springs which supply them not being copious enough to carry them across the plains. These afford many advantageous spots for farms, making sometimes large bottoms of rich moist land. The rolling surface of the hills presents sunny exposures, sheltered from the winds, and, having a highly favorable climate and suitable soil, are considered to be well adapted to the cultivation of the grape, and will probably become the principal vine-growing region of California.

The uplands, bordering the valleys of the large streams, are usually wooded with evergreen oaks, and the intervening plains are timbered with groves or belts of evergreen oaks, among prairie and open land. The surface of the valley consists of level plains along the Tulare lakes and San Joaquin river, changing into undulating and rolling ground nearer the foot hills of the mountains.

This stream has a deep and tranquil current; its waters are transparent and well stocked with salmon, and other fish; it is navigable for small steamboats about two hundred and fifty miles; a high range of mountains on the northeast, at an average distance of forty miles from the river, bounds its valley in that direction; and a range of hills, rather low in the north, but becoming lofty in the south, bounds it on the west, forming a prairie vale six hundred miles in length, nowhere less than forty, and often more than one hundred, miles in width. This vast plain extends, indeed, with little interruption, from the Bay of San Francisco, to the Colorado, gradually growing wider and wider and more uneven in its surface till it reaches that river, a space sufficient for an empire. A very large proportion of its surface is open prairie, covered with grasses and a species of wild oats; but it is so diversified by lines of trees

skirting the streams, by wooded spots standing out like islands on the green plain, by arms of timber stretching far down from the mountain sides, and by extensive circular groves, connected with large forests by a thin fringe of trees, that the valley presents the appearance of a vast series of plains of every conceivable area and shape; from the little wood-bound plantation to the township, the county, and the State. Over this immense plain rove innumerable bands of wild horses, mules, elk, deer, grisly bears, and other animals. The portion of the valley within twenty miles of the river is wholly uninhabited.

#### San Diego—its harbor, climate, &c.

It is situated at the foot of a high hill on a sand flat two miles wide, reaching from the head of San Diego bay to False bay. A high promontory of nearly the same width runs into the sea four or five miles, and is connected by the flat with the main land. The road to the hide-houses leads eastward of this promontory, and abreast of them the frigate Congress and the sloop Portsmouth are at anchor. The hide-houses are a collection of storehouses where the hides of cattle are packed before being shipped, this article forming the only trade of the little town.

The bay is a narrow arm of the sea, indenting the land some four or five miles, easily defended, and having twenty feet of water. At the lowest tide, the rise is said to be five feet, making the greatest water twenty-five feet.

South of Point Conception the climate and general appearance of the country exhibit a marked change. The coast from that cape trends almost directly east; the face of the country has a more southern exposure, and is sheltered by ranges of low mountains from the violence and chilling effect of the north-west winds; hence the climate is still more mild and genial, fostering a richer variety of productions differing in kind from those of the northern coast.

#### Bay of San Francisco and Climate.

The bay of San Francisco has been celebrated from the time of its first discoverers as one of the finest in the world, and is justly entitled to that character even under the seaman's view of a mere harbor; but when all the necessary advantages which belong to its fertile and picturesque dependant country, mildness and salubrity of climate, connection with the great interior valley of the Sacramento and San Joaquin, its vast resources for ship timber, grain and cattle; when these advantages are taken into account, with its geographical position on the line of communication with Asia, it rises into an importance far above that of a mere harbor, and deserves a particular notice in any account of maritime California. Its latitudinal position is that of Lisbon, its climate is that of southern Italy; settlements upon it for more than half a century attest its healthiness, bold shores and mountains give it grandeur, the extent and fertility of its dependant country give it great resources for agriculture, commerce and population.

The seaward coast of the Californias, extending through twenty degrees of latitude, has only two good harbors. There are, indeed, very many roadsteads and bays where vessels anchor with considerable safety, and take in and discharge cargoes; but they are all exposed to some of the prevailing winds. The only well protected harbor is San Diego, lying in latitude 33° 17' north; this is landlocked, without surf, with a smooth, hard



sand beach, and free from rocks and stones; but it is much less in extent and far less valuable to commerce than the bay of San Francisco.

The bay of San Francisco is the glory of the western world; its mouth lies in latitude 37° 58'; the water on the bar is eight fathoms at low tide; the mountains on either hand rise several hundred feet above the sea, and form fine land marks in foggy weather to point out the bar and the channel into the harbor. The capes at the ocean's edge are about two miles apart, always verdant and refreshing to the eye; and as you go up the passage the little streams tumbling from the rocks among the green wood, and the wild game standing out on the cliffs or frolicking among the brush, and the seal barking in the water, give promise of pleasure and rest from the toils of the sea.

The advantages of the San Diego route, while it would equally facilitate the intercourse with San Francisco and Monterey, and, if required, with Astoria by the coast route, will be made manifest by examining the map where the line of the road crosses the Colorado river, which opens an intercourse with the Gulf of California, rich in the pearl fisheries—all the ports of the same. Besides this, there will be the commerce descending the Rio Colorado and Gila; the former of which is now navigable several hundred miles, and the latter many miles.

Between the mouth of the Colorado and the Pacific, there is a region of very delightful climate. The mountains increase in height and among them are many beautiful plains watered with abundant springs and brooks, and interspersed with many pleasant woodlands, which, together, render the air charmingly temperate.

In the country between the Gila and the Colorado there is a great variety of temperature. From the junction of the two rivers, for the distance of 200 miles up the Colorado and about 100 miles up the Gila, the climate is exceedingly hot in summer and in winter rather frosty.

The river Gila forms the southeastern boundary of the Californias; it rises among the mountains west of Santa Fe, in latitude 36° north, and running westwardly a distance of about 500 miles, falls into the Colorado about 60 miles from the Californian gulf. It is a rapid rushing stream of excellent water; its banks, like those of the Colorado, in a great degree are composed of basalt and trap rock, rising perpendicularly, much in the manner of the pallsades on the Hudson. The valleys of the upper branches of this stream are comparatively rich and beautiful. The lofty mountains, among which it rises, the higher peaks of which are covered with snow throughout the year; the bold cliffs which at irregular intervals burst up from the plains; the conical hills of rich earth clad with forests; the grass fields covered with wild animals and Indian lodges; present a panoramic view of the Gila and its neighboring lands, which invites us to expect hereafter to see them inhabited by a somewhat dense and thriving population.

**HANNIBAL AND NAPLES RAILROAD.**—The Common Council of the city of Hannibal, Mo., has appointed Z. G. Draper, George W. Shields, and E. C. McDonald, Commissioners on the part of the city of Hannibal, and authorized them to subscribe the sum of Seventy-Five Thousand Dollars to this enterprise. The road if built, will be thirty-eight miles long.

## Opinions of the Press.

From the Cairo Times.

### SOUTHERN PACIFIC RAILROAD.

It is no longer idle or visionary to talk about a railroad to the Pacific. The necessity of the work becomes more apparent every day, as the increasing travel and traffic between the older States and the Pacific coast, demands cheaper and more speedy means of communication. Neither do the route or the means of building the road any longer admit of argument. The extreme Southern, or Texas route, has been declared by scientific men to be the *only feasible* one. The Government surveys of six proposed routes showed immediately that two of them were impracticable, and the question was narrowed down to three routes, the extreme Northern, the Middle, and the extreme Southern. Of these, the extreme Southern was found to be the shortest, to run through more arable land, and to cost much less than either of the others. The estimate of the engineers for the Northern route, was \$124,151,000; for the Middle, \$116,095,000; and for the Southern, \$84,070,000. The summit levels of the "passes" on the three routes are as follows: Northern, 6,044 feet, Middle, 8,733 feet, and Southern, 5,717 feet. The Northern route would require a tunnel. Beside these advantages, the climate of the Southern route gives it a most decided superiority. The experience of the Illinois Central Railroad, last winter, conclusively proves the difficulties to be apprehended from snow on either of the Northern routes, while the Southern is entirely free from that objection. In fact, nature has placed insuperable obstacles in all the routes north of the parallel of 32 degrees.

In addition to its natural advantages, the Southern route is preferable, from the fact that more than half of it runs through a region of country which is already inhabited and bids fair to be thickly settled within a few years, and which country is entirely destitute of railroad facilities. A writer in the *Cincinnati Railroad Record* thus speaks of the route and the country it traverses:

"In the first place it is nearly a thousand miles shorter than the Northern route, and in the second place it costs only about one-half as much as any one of the others. There are no mountains to go over or under, no grade exceeding 66 feet to the mile, and this only for a short distance. It is located on the parallel of 32, through the State of Texas for a distance of 800 miles. Taking a belt of country of 200 miles in width, with this parallel for a centre through the entire length of the State, I venture to affirm, without fear of contradiction, that it is unsurpassed in fertility of soil, salubrity of climate and all the great natural resources which, when developed, go to make a highly civilized and populous country. It abounds in minerals of every description, iron ore of the purest quality exists in great abundance. Extensive quarries of red and white freestone abound throughout the country. On the Trinity and some other parts of the State, are quarries of a pure white stone, soft and very easily wrought to any shape or form, but on exposure to the atmosphere, it becomes a perfect freestone, as solid as marble. The forests contain an infinite variety of timber, suitable for building and ornamental purposes. Live oak, cedar, pine, oak, ash, walnut, hickory, pecan, mulberry, cypress, holly, and the beautiful flowering magnolia.

"Among the agricultural productions, most naturally adapted to the soil and climate, and which now form a chief and important article of commerce, cotton stands pre-eminent; this is the great crop of Texas, and the source of much of its wealth and power. Sugar cane grows luxuriantly throughout the State, but its culture will not be extensive, nor will the sugar of Texas ever compete with Louisiana. Tobacco grows almost spontaneously throughout the country. It is an important production, equal in quality to that of Cuba, and will soon become an article of commerce and export. Breadstuffs of every description are produced easily and abundantly in every county. Two crops of Indian corn annually, is a common thing; one planted in February and the other in July."

Such are some of the advantages of the Southern route; but there is another consideration which is entitled to great weight, and which decides the question of building the road. Congress seems to have thrown the Pacific Railroad upon private enterprise, and that route will be chosen which offers the best inducements for the investment of capital. In this respect the Southern route is far ahead of any other. The State of Texas has made a most liberal donation of lands, 10,240 acres to every mile within her borders, which lands are of themselves more than sufficient to build the road. Furthermore, the Company is already formed, the lands are already secured, the entire route is already surveyed, and one hundred miles of it are already under contract. Col. A. B. Gray, United States Boundary Commissioner, as Chief Engineer of the Texas Western and El Paso Railroad Company, has surveyed the route from Fort Chadbourne in Texas, to San Diego on the Pacific, running through El Paso, the Mesilla Valley, the Gadsden Treaty Purchase, the Pinos villages on Rio Gila, down the Gila to its mouth, crossing the Colorado at or near the American Fort, thence across the lower part of California to San Diego. His report is published in full in an extra number of the *Cincinnati Railroad Record*, and is wonderfully clear and comprehensive, conveying a vast amount of information in a comparatively small compass. This report ought to be in the hands of every one. The distance, as surveyed by him, from the eastern boundary of Texas, near Shreveport, to the harbors of the Pacific, is 1621 miles, and the estimated cost of the road and its equipment for the entire distance is \$44,470,674. The value of the lands donated by Texas, estimating them at \$5 and \$3 per acre, is \$44,789,760. In commenting upon the report, the *Railway Times* says: "We know of few railroad projects starting with better prospects of success than this, having a line through a country actually suffering for railway facilities, and with a local traffic which will pay as soon as the first twenty miles of road are finished—beside the very large grant of 10,540 acres of land to the mile from the State and among the richest lands in the United States."

By this route, the Pacific will be connected with the Central West thus:

|                               |             |
|-------------------------------|-------------|
| From San Pedro to Fulton..... | 1,618 miles |
| Fulton to Cairo.....          | 400 do      |
| Cairo to Cincinnati.....      | 350 do      |
| Aggregate.....                | 2,368       |

The Galveston and Red River Railroad will form the connecting link from Fulton.

Such are a few points of interest connected with this great enterprise. In the short space we can spare, we can do no more than comment upon the main features of the work, and



much more remains to be said. It is a great enterprise to be undertaken and consummated by private means, but it can be done, and when completed it will undoubtedly pay. It is a project in which the people of the Ohio valley are deeply interested, and in respect to which information is more limited than it ought to be. We shall endeavor to keep our readers posted up as to the merits of this works.

#### THE ARIZONA COPPER MINES

The San Francisco Herald furnishes the following account of the Arizona copper mines, in the Gadsden purchase, mentioned in the summary of California news we published lately:

The Arizona mines are within the boundries of the Gadsden purchase, and are situated about 100 miles southeast from Fort Yuma, or thirty miles south from the Gila river, and between twenty five and thirty miles north from the western boundary of the territory recently purchased from Mexico by the United States. The existence of these mines has been known to the Mexicans for many years, but were not worked by them on account of the hostility of the Apache Indians. In the latter part of the year 1854, a party of forty men from this State started to prospect for silver in the Arizona mountains. During this expedition, specimens of copper ore were obtained from the locality above described; and soon afterwards a company was formed with a capital stock of \$500,000, with the view of working the mines.

The want of a constant supply of water has heretofore rendered the operations of the company extremely difficult, but this want is now supplied by means of wells. The extent of ground claimed by the company covers an area of about 2,500 acres. The mines were opened in the month of December of last year, and since that time the operations have progressed steadily, and with daily increasing success. A great number of veins have been opened, all of which have yielded from 65 to 85 per cent. of ore. A shaft has recently been sunk on a vein to the depth of fifty feet. In this distance the vein increased in thickness from four inches to four feet. This vein contains the red oxide of copper, a species of ore which yields from 75 to 95 per cent of copper, and in some instances essays of the ore prove that it contains gold, but no particular value is attached to the ore on this account, as it is not believed that the latter metal exists to any considerable extent throughout the vein. The last ore taken from the shaft is very rich being mixed with large masses of virgin copper.

The gray sulphuret of copper is taken from several veins recently opened. This ore yields from 70 to 80 per cent. of copper, and also yields an average of 150 ounces of silver to the ton. A number of these veins have been opened to the depth of thirty-five feet, increasing in this distance from six inches to twenty-four inches in thickness. The region of these mines abounds in a great variety of minerals, of little importance to the practical miner, but of vast interest to the mineralogist. At the present time there are ten Americans and about thirty Mexicans constantly employed in the mines, under the direction of an experienced engineer. The general supervision of the work is under Mr. E. E. Dunbar. The affairs of the company are managed by five trustees; Major Robert Allen, President; J. L. Wilson, Secretary; Capt. William Blanding, H. B. Hawkins, and James A. Shorb. It is confidently asserted that with the present mining facilities the company will be able to take out 200 tons of ore every month. The ore is worth, at the lowest estimate, \$300 per ton, at which rate the monthly rate will be \$60,000. From this product must be subtracted the expenses of mining and cost of transportation, say \$20,000 leaving a net profit of \$40,000 to the company or 8 per cent. per month upon each share of \$100.

We learn that the Texas Western Railroad Company have purchased 1000 tons of iron for their road, to be shipped immediately.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance*.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

#### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice; and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, MAY 12, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.  
CINCINNATI, ..... MONDAY, MAY 12.

#### TEXAS RAILROAD AND POLICY;—DIFFERENT PLANS.

Texas is a young and vigorous State. As she came in by annexation and not in the common way, she retains all her vast landed domain, and has the means of public improvement. At present she needs Railroads more than any one thing. The people need them; commerce needs them; property needs them. Accordingly the attention of the Legislature has been called to the subject, as beyond all others important. It is the subject which agitates all classes of people there. The great question, what is the best mode of creating these railroads? For this purpose, several plans have been proposed.

1. The first action was to charter a number of Railroad Companies, and to give most of them a large grant of land, viz: *sixteen sections per mile*, provided the works were undertaken and finished in a given time. But no commencement could be made without capital, and in the condition of Texas credit, at that time, and the ignorance which prevailed as to the value of her lands, but three Roads (including the Texas Western Railroad) have been commenced. In the meanwhile the people have become impatient, and the Legislature is importuned for new, practical measures. Since the Government, by payment of the Texas Debt, has raised the credit of the State, it has now the power to give a more direct aid, and to do this two plans are proposed.

The *first* of these is the plan before the Legislature, (which is to meet again in July) called the *Loan Bill*. This plan is precisely that which Tennessee has adopted most successfully, and which has set all her Railroad Companies in motion and sustained their credit. It is to *loan* the Railroad Companies \$8,000 per mile, and to apply it to the iron and the superstructure. In this the State aids the Railroads and gets perfect *security* in the construction of the road.

The *second* is called the *State Plan* and is nothing more nor less than for the *State* to *make the Railroads*; a plan which in all public works has heretofore proved only a State loss.

On the merits of these plans public meetings are now being held in Texas. The fol-

lowing are the Resolutions adopted in Grimes county:

*Resolved*, That it is the paramount duty of the State, by wise and liberal legislation, to aid its citizens in prosecuting works of internal improvement.

*Resolved*, That we approve of the land bonus system already adopted by the Legislature, and that we believe the State can in no way so profitably dispose of its public domain, as to appropriate it in such a way as to promote the construction of railroads.

*Resolved*, That this meeting heartily approve of the policy of the Loan Bill, now pending before the Legislature, and that we recommend the loaning of \$8,000 per mile, to any company that shall first construct twenty-five miles of road, the State to hold a first mortgage upon the amount of road so constructed to secure the said loan; and that this meeting instruct our Senator and Representatives in the Legislature, to use their influence to procure the passage of said Bill.

*Resolved*, That this meeting disapprove of the principle and policy of the States' undertaking, to the exclusion of its citizens, the construction of railroads, as a departure from the legitimate functions of government, and an interference with private enterprise, alike dangerous to the people and disastrous to the public credit; that while the construction of railroads by States has, in every instance, cost more than twice their value their management has been still more improvident and unsuccessful; and while there is not a single line of State road in the Union that is not now a tax upon the State, over and above its income, it would be folly in the people of this State to adopt a system that has been thus universally reprobated by experience elsewhere.

The meeting in Grimes county has undoubtedly expressed, in these Resolutions, the true policy for the State of Texas, and it is to be hoped the Legislature and the Railroad Convention will adopt this policy before the State rushes into irretrievable difficulties.

The *Loan Bill* is a good plan, for two very powerful reasons:

1. While it aids the Railroads the State credit is not demanded any faster than the Railroads are made. The State Bonds, therefore, will not be rushed on the market, and depreciated as rapidly.

2. The State Bonds will not be issued till there is a road bed for them to rest on; so the State will have *solid security* and *available*. All is accomplished by loaning so much a mile, which can be accomplished at all by the Loan on the road of so much per mile, as will furnish the superstructure.

The *State Plan* is a dangerous one, and not available for the following reasons.

1. If the *State* of Texas is to build Railroads on her broad territory she will require a most enormous issue of Bonds, and she has no such

credit as will sustain them. By issuing Bonds in moderation and joining the State and Railroad credit together, as in the Loan Bill, she can husband her credit so as to sustain it at a respectable level. Otherwise not. The State of Virginia, by merely subscribing *three-fifths* the stock has issued nearly twenty millions of Bonds, and already hazarded her credit. Texas, in the *State Plan*, will sink her credit at once.

2. What is to sustain Bonds issued merely on the State faith? Nothing that we can see, but the Public Lands. But the largest part of the Public Lands are already *pledged* to the Railroads; certainly to those which have commenced their work in time. If the State breaks faith with the Railroad Companies who have fairly commenced their work its financial character is gone. Its credit is gone. It may break faith with anybody, for any purpose. Three Companies have commenced their work in good faith; perhaps more; and the lands pledged by public acts to them must be preserved intact.

3. *State Works* are in nearly all cases losses. Pennsylvania has offered her public works for sale, without a bidder; and the Georgia Railroad, constructed *by the State*, was a failure, financially.

In our opinion, sound policy requires Texas to aid the Railroads and Rivers by *Loans*, to a moderate extent, and leave the State unembarrassed and its credit unsoiled.

#### SAN ANTONIO AND MEXICAN GULF R.R.

We learn from the San Antonio *Ledger* that the stockholders of this Company recently held a meeting at their office, in that city, when a pretty full attendance was had, and the Company being reorganized, the following gentlemen were elected directors: J. A. Paschal, W. J. Clark, J. Ulrich, G. P. Post, F. Giraud, J. C. Wilson, S. A. Maverick, J. O. Wheeler, J. D. McLeod, W. G. Kingsbury, G. Schleicher, J. Wælder, C. E. Jefferson. At a meeting of the Directory in the evening, J. A. Paschal was chosen President, and C. E. Jefferson, Secretary. Messrs. J. C. Wilson, W. G. Kingsbury, W. J. Clark and G. Schleicher were appointed an Executive and Finance Committee. We understand that the new directors have several proposals for building the first section of the road under consideration.

The Pacific Railroad question is not yet settled in Congress. Those who have not yet sent in memorials will do well to do so.



## VICKSBURG AND EL PASO RAILROAD.

## MEETING OF THE DIRECTORY.

This important enterprise is now in a condition the most flattering to success. A meeting of the Directory was held during the past week at Marshall, at which were several distinguished gentlemen from a distance, viz: Gov. Dimond, President of the Company, Hon. T. Butler King, Gen. T. J. Green and Col. C. S. Todd, Directors. We were in attendance at the meetings of the Board from Monday until Wednesday afternoon, when business compelled us to leave.

The affairs of the Company were freely and openly discussed, and even persons not members of the Board were invited to express their views or give testimony in reference to particular matters. Thus much for the charge which has been often preferred that the Company is disposed to keep every thing secret, to work in the dark, not allowing the public and the stockholders the privilege of knowing what was going on.

Up to the time of our leaving, nothing definite had been arranged, or rather no distinct set of resolutions had been passed, though the general line of policy was well understood. To save the charter—unless there is an extension—ten miles of the road will have to be completed by the 16th of March next and fifteen more by the 16th of March 1858. This will require work, but no fear is entertained of the result; the Company, we doubt not will be amply able to comply with all the requisitions of the charter.

The iron for the first ten miles of the road has been already purchased, and is expected up in the course of a very few days. We have in our possession a telegraphic dispatch, sent from Washington City to New Orleans, by Gen. Cazneau, to Maj. E. A. Blanche, Chief Engineer of the road, which announces the purchase of iron, and the probability of immediate shipment. Before the receipt of this dispatch, we were informed by the Hon. T. Butler King, that negotiations were in progress for the purchase of ten miles of iron with every reasonable prospect of success. This removes one difficulty, the next will be to grade or complete the grade of the first ten miles, haul and lay the iron by the 16th of March, in order to save the charter. This of course, will require labor, but the Company have in hand the means that will most certainly ensure success. The grade on six miles running east from Marshall, is now nearly complete, and the other four, with the hands now employed and to be employed, can be graded in the course of a few months. The iron will have to be hauled from the Lake or from Shreveport, should the Lake not be navigable. Arrangements for hauling, at a stipulated price, has been already agreed upon with a well known gentleman of great responsibility.

As this great work will now be prosecuted

beyond all doubt, we think the Vicksburg Company should complete the road from Shreveport to the line as soon as possible. It will be of great service to our Texas friends in the further prosecution of their work. Hauling iron twelve or fifteen miles is an onerous task, and ought never to be attempted except in such extreme cases as the present.

The Texas Company will keep from one to two hundred hands employed during the year, no more being necessary to do the work required by the 16th of March next.

This Company has breasted opposition from the beginning; the individuals composing it have been most unmercifully abused and vilified, they have been slandered at home and abroad by enemies both secret and open, but now thanks to themselves—their indomitable energy and great talent—they have at length reached a stand point from which they can most certainly command success.

That they have never committed an error is not claimed by themselves or friends. In settling the preliminaries of a great work in the midst of opposition and with only limited means to begin with, some error was to have been expected.

## GEN. T. J. GREEN'S RESOLUTIONS.

## ADOPTED UNANIMOUSLY

*Whereas*, The building of the Texas Western Railroad, upon the line of 32 degrees north latitude, (through the State of Texas,) seems, under the present arrangement of the company, to be rendered certain; and, whereas, its connections—east to the Mississippi, and west to the waters of the Pacific—are absolutely necessary to the accomplishment of the great southern national railway; and, whereas furthermore, it is certain that the true interest of the company, as well as its eastern connections to the Mississippi river, will be best served by a consolidation into one company and one direction, these several roads—therefore,

*Resolved*, That this company will unite with said eastern connections upon fair, just and liberal terms.

*Resolved*, That in the opinion of this company such "fair, just, and liberal terms" would be a consolidation of the several companies, to wit: The Vicksburg, Shreveport and Texas Railroad; the Cairo and Fulton; and the Gaines' Landing roads, via, Jefferson and Marshall, by a union of their several assets of real and personal property, after deducting the indebtedness of each company—and that the said roads with their respective stockholders shall be interested in the consolidated road, in just proportions to their several clear capitals.

*Resolved*, That the president appoint three commissioners, from the Board of director, (a majority of whom shall constitute a quorum,) to meet a like number, if appointed by either or any of the aforesaid companies, whose duty it shall be to agree upon such terms as indicated in the above resolutions, and their proceedings shall be binding and final, upon the ratification of a majority of the stock held and registered in this company.

*Resolved*, That the president of this company be, and hereby is, respectfully requested to forward, at his earliest convenience, a copy of this preamble and resolutions, with the names

of the commissioners appointed under the same, to the several boards of directors of the above named companies, requesting a cordial co-operation for the accomplishment of said object.

In event that the terms of consolidation shall be agreed upon by the commissioners of said companies respectively, or either of them, then it shall be the duty of the president and the executive committee to call a meeting of the stockholders.

## R.R. BRIDGE TO BE TESTED.

We learn that one of the Moseley Tubular Wrought Iron Arched Bridges now constructing for the Little Miami Railroad will be tested next week. We understand that the constructors design to make this a test of unusual severity and one which will be of great interest to engineers. The bridge is located at Morrow, 36 miles from Cincinnati.

We have long believed that iron structures must be adopted for railroad bridges and that they must be of such a shape as not to depend on the tensile strength of the metal. These, being composed of wrought iron tubular arches, approach the nearest to our ideas of strength, lightness and economy. We shall therefore look with interest to the results of this test and endeavor to place them before our readers.

## DEVELOPMENT OF HEAT IN STEAM BOILERS.—HARSHMAN'S METHOD.

Sometime ago in detailing an experiment made with reference to the bursting of boilers, we promised to make in our own establishment experiments to test the facts of the rapid development of heat in steam boilers covered by Harshman's method. Since then we have conducted the experiments to our own satisfaction and now give their results to our readers.

Our boiler is an upright tubular one, with flues of one inch opening each. The boiler was thoroughly cleaned and put in the best possible order. The engineer was then directed to run for one week carefully weighing his coal, as well that used in getting up steam as the consumption to do the work. The result of the week's experiment was an average of 750 lbs. of coal consumed per day. The quantities varying from 25 to 50 lbs. per day according to the work to be done. We should here state that the engine also had been put in good repair. At the expiration of the week, having satisfied ourselves of the average consumption, we directed the copper casing to be tied around the boiler; the engine continuing as before to weigh carefully the fuel consumed.

The result of the first week's consumption after the copper was put on was 475 lbs. per day. The second week and each succeeding week showed an average of 450 lbs. per day. The consumption of fuel and the comparative advantages gained by the copper covering would therefore be represented as follows:

|  |          |
|--|----------|
| Consumption without copper casing..... | 750 lbs. |
| Do with copper casing.....             | 450 "    |
| Saving.....                            | 300 lbs. |



or 40 per cent. of the ordinary consumption of fuel in the furnace.

This result was to us, who paid the coal bills, highly satisfactory. But apart from its economy, it presents an interesting subject for consideration. That a steam boiler does not radiate 40 per cent. of the heat received must be evident. If it did, enclosing the boiler in wood or other non-conducting substances would show an equal saving in the consumption of fuel. Yet such is not the fact. We are informed by practical men that a wooden case effects a saving of from 5 to 10 per cent. It is also stated that a sheet iron casing will effect about an equal saving. The saving of 40 per cent. by a copper casing wrapped loosely around the boiler is a fact for the consideration of the curious and philosophical. We hope to see at no very distant day a series of comparative experiments, where boilers of equal make shall be tested side by side, and we may then be tempted to theorize on this question for ourselves. Meanwhile we may in a future number attempt to give Mr. Harshman's theory as contained in his interesting pamphlet.

## Correspondence.

LOWER MISSISSIPPI,  
STEAMER MOSES McLELLAN,  
MONDAY, April 7, 1856.

EDITOR R. R. RECORD—*Dear Sir:*—The Social Hall of a crowded Steamer is not the most appropriate place in the world for indicating a letter to a friend. The noise and jar of machinery, the light and careless conversation of passengers, the prattle of children, and the music of the piano all conspire to divert the attention and distract the mind from the subject. As we are at all times and in all places, more or less affected by the circumstances around us, and as the climate has much to do with our health and happiness I will only speak of the incidents of travel as they occur, and the happy atmospheric changes we enjoy as we approach the *Sunny South*.

Five days ago we were ploughing through the deep snows of Central New York with nothing but dread, stern winter around us;—now we are luxuriating under the genial smiles of the goddess of spring; the earth is clothed in beauty, and the air is redolent with the fragrance of flowers. Nature smiles and we are happy.

Our boat is crowded with passengers, and the greater share of these are bound for the Empire State of the southwest. Texas will receive an addition to her population of nearly a hundred souls from this boat, and these are people of industrious habits and ample means, mostly from Indiana and Kentucky. Sixteen got off at Stirling in Arkansas, and with their waggons and teams take across the country to

Hill county, Texas. Twenty-three leave us at the mouth of Red River and go up that stream to Cass and Dallas counties, and 56 go on to New Orleans. From thence they divide, some going via Galveston, others taking a Red River boat for Northern Texas.

In this company it was our good fortune to make the acquaintance of some of the principal men connected with the greatest enterprise of the day, that is the Southern Pacific Railway through Texas. Ex-Governor Dimond, of Rhode Island, President of the road, Gen. Thos. I. Green, of Texas, one of the directors, and Col. C. Bradley, of Ohio, Secretary of the Company at Marshall, Texas, were on their way to Marshall to attend a meeting of the directory and open an office for the Company at that place. Time, place and circumstance seemed to conspire to make these men the observed of all observers. Every body now wishes to learn the prospects and progress of the road, and all the emigrants are anxious to learn of the great resources of Texas. So that between the two classes of enquirers, the conversational powers of these gentlemen were taxed to their full extent from early morn till late at night. This appeared to be a source of mutual interest and delight, as the one party seemed as willing to communicate as the other to receive.

The river is in a fine stage of water, and the weather is of the most delightful character. A good boat, excellent living, gentlemanly officers, and ladies and children enough to make the time pass agreeably. What more do we need to make a pleasant trip?

Yours truly, LUCAN.

### MEMPHIS & LITTLE ROCK R. R.

We take the following notice of this road from the little rock *True Democrat*.

The *Democrat* has not always been favorably disposed towards the company building this road. The publication therefore of this information in its columns would warrant implicit confidence in its correctness.

At the request of our friends of the Appeal, we cheerfully give place to the facts below.—We are sure we shall always be glad to hear of the improving prospects of this railroad—we look upon the enterprise as favorably as any citizen in the State. We notice, lately, that the company have made one or two important steps in the *right* direction and we are glad to observe it.

As the Memphis Appeal has never attempted to humbug our people in this matter, we give publicity to its statements with the confidence that they are facts. The following is the Appeals article. It contains encouraging information.

"Upon our application, one of the officers of this road has politely furnished us with the following facts: 26 miles are now graded. Eight additional miles, making in all thirty-four are cleared. Thirty-six thousand cross-ties are made, the most of which are delivered. There are four hundred hands now engaged, in different localities, on the road. The track

laying commenced several days ago, and will be vigorously prosecuted until it reaches the St. Francis river, thirty nine miles from Memphis.

It is confidently hoped that the track will be extended and ironed for the cars to the St. Francis by the first day of January next. Four miles of iron have already been received, and three additional miles are expected on the John Simmonds by its trip next week. The balance of the iron will be brought from New Orleans from time to time by the same boat. The company are expecting in a short time the first locomotive, which is named 'Arkansas.' This was built at Cincinnati. Two others are being built at Philadelphia, one of them is to be called the 'ARKANSAS TRAVELER.'

The above are reliable facts, and as they convey as much interest to the people of Arkansas, as to our own citizens, we respectfully ask our friend of the Little Rock *True Democrat* to give them a place in his columns. We have commenced this great enterprise in good earnest, intending to push it forward vigorously; and may we not venture to ask a generous and cordial co-operation from our Arkansas friends? We are blended together by a common interest, and a common destiny. Why should we ignore the one or dispute the other.

### OREGON. ITS NATURAL HISTORY

The country traversed by this division presents several well defined and very distinct zoological and botanical regions.

The limited time of the survey, and the extent of country traversed, do not afford sufficient data for defining the limits of these regions and their peculiar products with accuracy, I will attempt, in the following sketch, to give some idea of their outlines.

It will be observed that there are two great regions very distinct and peculiar in their products, both animal and vegetable, that of the forests and that of the plains. The first of these is divisible into sub-regions—for example, the alpine summits of the mountains and the small prairies. The second also presents several sub-regions—for example, the rocky hills and the sandy valleys. The rivers and their immediate banks form a region which differs but little in products on either side of the Cascade mountains—all those met with being tributaries of the Columbia. All the above sub-regions differ more or less in the animals and plants peculiar to them, as may be seen from the collections made, and the notes in connection with each of them.

From the time of leaving Vancouver, on the 18th of July, until we left the Cathlapoot'l river, our course was among the western spurs of the Cascade mountains. All this region was densely wooded, except a few small prairies.

The principal trees of this region were the three species of *Abies*, (spruce and fir,) one oak, two maples, one dogwood, one ash. The characters of the shrubs were two wild roses, three *Spiraeas*, an elder, and the 'Oregon grape.' Near the streams grew several species of raspberry, two poplars, and various willows, which were seen on the river banks throughout the country. Two species of huckleberry, a red and a blue fruit kind, were abundant in some parts. Very few plants were in flower in the forest, and but few on the plain, the dry season being accompanied by an almost complete cessation of vegetation.



The small prairies met with were covered with a short growth of grass, then dried up, and around the borders of some was a dense growth of *Pteris*, (fern) reaching above a man's head, and almost impassable in places. Most of these prairies are covered by water in wet seasons, which prevents the coniferous trees from growing on them, and assimilates their vegetation to that of the river banks. Very few animals were met with during this time; the hot weather was probably a reason for their scarcity—driving them to the deep shade of the forests and the higher mountains, where a later continuance of rain affords better food for the deer, elk, &c. A few small hares, two kinds of grouse, and pigeons, were the largest game.

Leaving the Cathlapoot'l river on the 4th of August, we ascended by a steep and continuous acclivity to the higher parts of the mountains, about 5,500 feet above the level of the sea. Here the alpine region commenced, which shows itself chiefly in the different class of plants seen and in their late growth. The firs of the western slopes were replaced by two spruces, and a few pines and larches began to appear. The five snow peaks seen at a distance showed that trees ceased to grow at about 6,000 feet above the sea-level, though vegetation continued much higher up.

Strawberries, which were gone at Vancouver by the middle of June, were here in abundance. A peculiar species of huckleberry, with large purple and finely-flavored fruit, abounded, with another producing blue fruit. On the highest hill ascended was found a low spreading juniper, very characteristic of alpine vegetation. The grass in most parts was still green, and many flowers continued to bloom. Showers of rain and hail descended during our stay. No animals were seen peculiar to this region, and nearly all those seen on the west side continued up to the highest point reached. Cranes, ducks, and geese were noticed—probably remaining up in these high mountains to breed.

On the 9th of August we commenced descending the eastern slope of the mountains, and at once noticed a marked change in the vegetation. Instead of the dense forest of firs covering the western side, the prevailing trees were two species of pines and a few oaks; these stood at distances of thirty and fifty feet apart, and the ground underneath was open, smooth, and covered with a good growth of grass.

A *Caenothus* with fragrant shining leaves, was the most abundant and characteristic, other shrubs appearing. Most of the plants of this region had passed flowering, and the soil was already very dry. Excepting a small prairie surrounding a lake, this forest continued on our course for about seventy miles. The plants found in flower on this side the mountains were nearly all collected. Very few animals were seen in the forest; a few elk, deer, and coyotes, being the principal.

Approaching the borders of the plains, some plants peculiar to them were observed, generally scattered and stunted in growth. The pines also became smaller and more scattered, ending rather abruptly at last.

August 13.—We entered suddenly upon the plain region, which we continued to traverse for a great part of the remainder of the route. From observations made, I am able to mark out the western and northern limits of this region in Washington Territory. Commencing at the Columbia river, opposite the Dalles, the line of forest growth runs northwest-

erly, crossing the eastern spurs of the Cascade mountains, about as far as 48° of latitude. From here north it is less defined, the forests and plains being intermingled up to 49°; the summits and northern exposure of the hills being covered by forests, while the valleys and southern slopes are nearly destitute of trees.

Returning to the south from Fort Colville, we again met with the open plains a little south of the Spokane river, which may, therefore, be considered their northern boundary east of Columbia. Towards the east the Cœur d'Alene mountains were seen, covered with forest limiting the plain in that direction. "The Plains" comprise not only high and almost level table-lands, but steep hills and deep valleys. South of the Snake and Columbia rivers all the country passed through was of this character. The vegetation of these various sub-regions is very dissimilar; on the high spurs east of the mountains, commonly very stony and dry, scarcely any plants were flowering during our journey. *Artemisia* or "wild sage," and *Purshia* or "grease wood," were the characteristic shrubs. The withered remains of some umbelliferous and other plants were noticed, and grass was poor and dry. In the valleys a sandy but better soil presented several different vegetable sub-regions. The high gravelly terraces bordering some of the valleys were covered with a dry but dense growth of grass. Near the streams occurred some rose and cherry bushes, the usual poplar and willows, and a few small birch and pine trees, with some flowers still blooming. North of the Yakima the larch tree was abundant on the mountains, with the long-leaved pine and the black fir, in nearly equal proportions. Near Fort Colville a few birch trees of large size were seen, having a laminated bark, of which the Indians make canoes. The vegetation of the Spokane plains resembles that west of the Columbia river, as far as could be seen, from its withered state, when we passed through it.—Among the animals peculiar to the plain region, the most remarkable are the badger, "sage fowl," sharp-tailed grouse, or prairie fowl, horned lizards, and rattlesnakes.

South of the Snake river, to the north of the Wallah-Wallah, the country resembles that near the Yakima river, but the hills are better covered with grass, and the valleys more fertile. Several peculiar plants were seen here. From the southern bank of the Columbia to the southwest, we could see a mixed country of high table-lands and undulating plains, with the wooded outline of the Blue Mountains in the distance. After entering the gap of the Cascade Mountains, at the Dalles, the forest again appeared with a similar succession of trees from east to west (described) when crossing them (in the opposite direction) in August. A much milder climate prevailing on the west side of the Cascade Mountains, was accompanied by the second flowering of several species of plants, in November and December. Among those seen were the strawberry, blue and yellow violets, and various garden plants.

Besides the animals seen or collected on the route, several are said to inhabit the forests. The deer, (two species,) black bear, and a brown variety of lynx and raccoon, are not uncommon. Beavers are said to be found on the streams, where the mild winters preclude the necessity of building dams to prevent the water from freezing too deep. The panther or cougar is also reported to be sometimes found. The mountain sheep undoubt-

edly inhabits the limits of perpetual snow—a skin being seen in possession of an Indian near Mount Rainier.

The rivers flowing into the Columbia have a peculiar animal as well as vegetable character, which is much the same on both sides of the mountains. Several kinds of water-bird frequent them, especially in the autumn, only emigrating to the west side in winter.

Three fine species of trout were obtained, but unfortunately destroyed; one of them appears to be peculiar to the streams on the eastern side. A few other kinds of fish were also seen. A collection of all the fresh water shells seen was made. A species of crawfish was met with, even to the headwaters of its branches, and in the Columbia occurs eight and ten inches long. It is said to be a very good substitute for lobsters, as an edible.

#### ACTION OF THE LEGISLATURE OF TENNESSEE ON THE PACIFIC R.R. QUESTION.

The following are the resolutions passed at the late session of the General Assembly of the State of Tennessee, and the report of the Committee on Internal Improvements on this subject:

"WHEREAS, it is of the first consequence to the State of Tennessee that the great Atlantic and Pacific Railroad thoroughfare should pass through her territory; and whereas, it is believed by the General Assembly that the projected route, known as the southern route through Texas, is not only the nearest and most practicable but that it may contribute to effect the aforesaid object; therefore, be it

"Resolved by the General Assembly of the State of Tennessee, That our Senators in Congress be instructed and our Representatives requested to use their utmost exertions to procure the passage of a law by Congress favoring the construction of and the location of the great Pacific railroad along that route known as the southern route through Texas, and appropriating to it all the patronage and means consistent with the policy and power of the General Government.

"Resolved, That the Governor of this State be requested to forward to each of our Senators and Representatives in Congress a copy of these resolutions."

The above resolutions were subsequently adopted by the Senate.

On the 16th inst. the Committee on Internal Improvements, through their Chairman, Mr. Brown, made the following report:

"The Committee on Internal Improvements, to whom resolutions 'instructing our Senators and requesting our Representatives in Congress to favor, so far as it may be in their power, the Southern Pacific Railroad route through Texas,' were referred, would beg leave to state that they have had the same under consideration, and concur in the opinion of their correctness.

"The committee would submit the following brief compilation of facts, figures and opinions, connected with this subject:

"This road should be built; it is an undertaking of the greatest magnitude—a continuous line of two thousand miles in length—at a cost of \$100,000,000. It is the greatest enterprise of the age, and as a national scheme should have appropriated to it, in the language of the resolutions, 'all the patronage and means consistent with the policy and powers of the General Government.'



"The United States have a coast line of near twenty-two hundred miles on the Atlantic Ocean, and on the Pacific about fourteen hundred miles, with an area of near three millions of square miles of territory spreading out from ocean to ocean, embracing twenty degrees of latitude, and containing about twenty millions of inhabitants, with wealth unbounded and resources inexhaustible; yet between the two extremes of the Union, the old Atlantic States on the East and the young Pacific States on the West, there is no national highway or thoroughfare on our own soil. Between these States there is a wide, unbroken territory, lying in one grand and almost trackless wilderness. The travel, commerce and mails passing from one of these States to the other, must pass through foreign lands to reach our own shores, and continually be subject to the exactions of friends or foes, as these foreign nations, upon whom we are dependent, may be.

"The road should be built as a connecting link in the great system of railroads—the arteries of trade and commerce, elements of this nation's greatness; and these lines of road should be extended and distributed throughout the whole body politic, so as to vivify and connect the whole.

"This road is not only a necessary means of travel and commerce, but is essential to the perpetuity of the bonds of union between the East and West, and to the cementing our nationality. The peaceful and political relations between these widely-dissevered States will in a good degree depend upon the blending of interest, commercially and socially, by railroad communication—the linking the States together with interest and patriotism. This road will bear upon its bosom a million tons of freight and trade to invite the pecuniary, while twenty millions of passengers will fix the social interest of the citizens of this great Republic, so that these *iron bands of rails*, thrown across the continent, will lead to a lively intercourse and advantageous commerce to the States and be stronger, and tend more to render our Union indissoluble and perpetuate our national blessings than compacts and constitutions.

"If the intercourse between our States is impeded, if one portion is taught or compelled to seek associates and business companions abroad and the Government fail to make the approaches to all parts of the country accessible, estrangement to the Government is the consequence, the national ties are weakened, and a desire is begotten, if an effort is not made, to sever the bonds of union. The completion of this railroad would remove all these difficulties and be an important step preventive of a great Pacific Confederacy in the future of this country.

"Nature and the engineer's instruments have both pointed to the southern route as the nearest and most practicable. Nature speaks in the climate, soil, timber, rivers and productions. The instruments mark the distances, elevations and depressions on the route, showing the cost to be about one-half of the other routes, while the distance is about one-third less. Free from the cold of the North and the diseases of the extreme South, and with the certainty and safety of the route, as evidenced in these characteristics, this route will command and receive the travel and carrying trade between the oceans.

"The Secretary of War, after a review of the several routes, distances, cost and character of the work, says.

"A comparison of the results stated above, and of those exhibited in the tables referred to, conclusively show that the route of the thirty-second parallel, (the Texas route,) is, of those surveyed, the most practical and economical route for a railroad from the Mississippi River to the Pacific Ocean.

"This is the shortest route, and not only is its estimated cost less by a third than that of any other of the lines, but the character of the work required is such that it could be executed in a vastly shorter period."

"And again:

"Not only is this the shortest and least costly route to the Pacific, but is the shortest and cheapest route to San Francisco, the greatest commercial city on our Western coast; while the aggregate length of railroad lines connecting it at its eastern terminus with the Atlantic and Gulf seaports is less than the aggregate connection with any other route."

"How is this road connected with Tennessee, and why are Tennesseans more deeply interested in this route than most of her sister States? The Eastern terminus of this road is properly at Corsicana, Texas, as that is the branching point for either New Orleans, Vicksburg, Memphis or St. Louis. From Corsicana the road runs to Fulton, to Little Rock, and from thence to Memphis. These connections are not only contemplated, but are being provided for and built. By the Fulton and Memphis and Little Rock roads we are borne from the trunk of the great Pacific Road to Memphis, the great cotton emporium of the South-west, thus making the principal branch—practically the terminus of this great natural thoroughfare—at Memphis, in our State, and there connecting with the entire system of railroads in Tennessee, and running through the State, connecting with the roads North, South and East, gathering within its influence the roads from Georgia to Maine the lakes and the Atlantic Ocean.

"This route connects Memphis, Jackson, Nashville, Murfreesborough, Chattanooga and Knoxville, the great cities of the State, and from Memphis by great leading roads to Louisville, and thence to the cities on the Atlantic coast, to Charleston and New Orleans;—from Jackson, the capital of the West, to New Orleans, to Mobile, to Cairo, to St. Louis, and through the States of Illinois, Indiana and Ohio, to the cities of the lakes and the East; from Nashville, the metropolis of the State, to the cities of Tennessee, East and West, uniting with their leading routes, and to Cincinnati, Charleston, New Orleans, Savannah, Louisville and Evansville; and from Knoxville, the metropolis of the ancient State of Frankland, now the rapidly-growing emporium of the fairest portion of the United States, by her great radiating routes to Louisville and Cincinnati, to Charleston and Savannah, to Beaufort, Wilmington and Norfolk, and to Washington, Baltimore and New York, and thus tap the grand cordon of roads that bind our Eastern coast.

"No commercial project in the world ever did or can offer such a prospect of business and profits. The Pacific coast will soon be filled with busy millions of moving, traveling, trading inhabitants. The millions then lying West, and 'beyond the West,' with the millions on the East, will travel this road. The commerce and trade of the United States, with much from Europe, India and other distant nations, will pass over this great artery of trade and travel. A large portion of all this commerce and travel will pass through Ten-

nessee on our railroad routes, or be discharged and distributed at the city of Memphis. This immense amount of commerce will give Memphis her hundred thousand inhabitants, with wealth exceeding any city of the South; and these commercial advantages will be diffused and felt throughout the State—the citizens will realize these vivifying influences from Carter to Shelby. The wealth, commerce and travel, with their attendant advantages, foreshadowed to Tennessee cannot now be computed. Tennessee alone, however, is not to be the recipient of all the blessings to flow from the building of the world's highway; our whole country will share in this prosperity. The wilderness will be subdued, agriculture quadrupled, mines opened, and the great natural resources developed. This country will be the granary of the world; the canvas of her commerce will be upon every sea; while the smoke from her manufactories and workshops will commingle, and hammer will respond to hammer, from the rising to the setting sun of our great Republic.

"The committee, therefore, recommend the passage of the resolutions. All which is respectfully submitted.

"H. BROWN, Chairman.

#### CINCINNATI MACHINERY. LANE & BODLEY'S POWER MORTISER.

It is one of the gratifying proofs of the growing skill and energy of our mechanics that Cincinnati is becoming a point for the manufacture of machinery, not only for the West and South, but in a measure also for the East. Located at a point which has decided advantages for the cheap and abundant supply of iron and coal, the one the raw material of which machinery is formed, and the other being the great source of the mechanical power necessary to work it. Cincinnati needs but the skill and abundance of mechanical labor to enable her to compete successfully with manufactories located anywhere, either East or West. That she is rapidly acquiring both is evidenced by many gratifying proofs. The amount of her manufactures is increasing and many of these articles are now in demand in Eastern markets. Among these we know of none that is decidedly more creditable to our skill than Lane & Bodley's Power Mortising Machine. The requisites of a good Mortiser are that it should do its work with accuracy, rapidity and ease. Now this machine does all this. It consists of a clamp table to hold the work, a boring and chisel mandrel and the driving part. The clamp table is so arranged as to hold the work either square or at any required bevel, making square or beveled mortises with equal ease. The boring mandrel has a perpendicular as well as a rotary movement. The chisel mandrel moves up and down and can be reversed. The driving part consists of a pulley to receive the power, a fly wheel with a pitman which communicates the motion, and a vibratory arm. This latter we regard as the most useful and distinct feature of the machine. The vibratory arm is fixed on a pivot at one end while the other is moved freely up and down, and in its turn gives motion to the



chisel mandrel by means of a wrist moveable on the arm. Now it is easy to see that when this wrist stands over the fixed pivot the mandrel will be at rest and will receive an up and down motion of greater or less extent, in proportion as it is drawn on the arm away from the pivot. This is accomplished by a treadle and is thus easily controlled by the workman. He can throw the mandrel into a state of rest or motion of any desired extent to suit the work at pleasure and without disturbing the belt.

That these machines are accomplishing all that a mortising machine can accomplish is evidenced from the fact that the manufacturers are now taxed to the full present capacity of their establishment. Their shipments amount to an average of three machines a week, full half of which go to the Eastern market.

## Opinions of the Press.

[From the Houston Telegraph.]

### WILL THE LOAN BILL BECOME A LAW?

Resolutions in favor of the Sherwood-Sullivan plan of building railroads by the State, offered by Mr. Sorley, at a meeting of the citizens of Galveston recently, were given the cold shoulder, and it is certain that a majority of the good citizens of Galveston who were reputed to be favorable to the views of Internal Improvements now ignore them. In Grimes, Walker and Montgomery counties, where Mr. Sherwood's plan was endorsed by a few individuals, out of courtesy to him, there is scarcely a division of sentiment on the subject of said roads. The whole community is in favor of the Loan Bill. There cannot be said to be any considerable revulsion of public sentiment on the subject, because there never was a majority in either of these counties favorable to the State plan.—There is not a county in the State that would now endorse the policy of changing the constitution to authorize the Legislature to contract a debt for Internal Improvements. Nineteen-twentieths of the people are favorable to the policy of State aid, and are willing, and generally very solicitous to see the \$3,000,000 now invested in United States bonds, loaned to railroad companies at the rate of six to eight, or even ten thousand dollars per mile, after the building of twenty-five miles of road, with a first mortgage on the road so constructed to secure the loan. By this means the money now in the Treasury may be made available to aid in constructing 500 miles of railroad, which will greatly increase the facilities of transportation, and relieve the remotest sections of the State from the greatest drawbacks to settlement and cultivation. The State, instead of getting \$150,000 in interest from the Federal Government, derives \$180,000 from railroad companies, and her taxable wealth will be increased by the construction of 500 miles of railroad, not less than \$200,000,000, or in other words, more than double the present wealth of the people. The increase of revenue from this enhanced valuation, at the present rate of taxation, will be about \$300,000 annually, so that the net gain to the State Treasury, upon this estimate, will be about \$330,000 more than the \$3,000,000 will produce while it remains locked up in United States bonds. Messrs. R. & D. G. Mills estimated the loss to the planters who sent their cotton to the coast in 1853 at about \$1,000,000, a loss made up of expenses, depreciation and damage, occasioned by the present means of transportation. In view of the great gain to

the Treasury in a great financial point of view, to property holders in the rise in value of real estate, and the great saving to the planting interest; in view of the vast impulse that such an expenditure will give to general improvements, to the increase of population and the general development of the great resources of the State, what will justify the Legislature in withholding this money from investment in bonds of Texas railroads? The people have again and again endorsed the loaning policy, and the small, very small minority who oppose it, and who, so far, have been potent for evil to the country, are governed only by local considerations. We refer to those representatives of sections of the State lying remote from the main thoroughfares, and who argue, because the immediate benefits of such expenditures cannot at once ensue to these portions of the State, they should oppose them. One portion of the State cannot be developed and benefitted without advancing the time when the whole shall be developed and improved. The pine forests of the Southeast will remain valueless until the West, where no pine abounds, is settled, and a market created for lumber. When this is done railroads will penetrate the pine forests of Jefferson and Jasper; and when that day arrives, those lands will be as valuable as any between the Sabine and Rio Grande. An abundant supply of lumber for building and fencing, is necessary to develop all that portion of the State now lying West and North of the present settlements, and that supply cannot be had until the great forests of the East are tapped with railroads.—This event must occur, and the surest way to expedite it is to aid in constructing the main lines in Eastern, Western and Middle Texas.—These lines must be built first, because the population and the production is found upon them to aid in and justify their construction; and wherever local aid to the extent of from \$4,000 to \$8,000 per mile cannot be raised, railroads cannot be built, nor, if built, could they be sustained. Nearly every State in the Union is loaning money or giving lands, or both, to her railroad companies. By this means the vast system of railroads, nearly 25,000 miles, that has grown up in the United States in the last twenty years, has been built. In no isolated instance has the plan of building roads exclusively by States succeeded. The State plan failed in Pennsylvania, in Illinois, and Georgia, while the corporate plan has achieved what has been done in this country, producing the most unexampled progress of railroads, and adding thousands of millions to the wealth of that portion of the people who never invested a dollar in such enterprises. The loan bill has passed the Senate by a two-third vote. What will be done in the House?

GALVESTON, April 4th 1856.

MESSRS. EDITORS:—I have been asked by many friends, if my private engagements would allow of my attending the proposed convention of the friends of Internal Improvement, at Austin, on the 4th of July; and the subject has assumed so much importance in consequence of the adjourned session of the Legislature to the same period, I am induced at their request, to give my views, in order that there should be no misunderstanding as to the system of Internal Improvement which I prefer, or, as to the course I might pursue under certain circumstances, and as an alternative.

I have never disguised my preference for the State Plan, as understood, and so called among us, and if my vote could decide the choice of the Legislature, I would so cast it. But in our present urgent necessities, it seems to me unwise and impolitic not to consider the powerful opposition it has ever met with, while we, at the same time, are called on to deplore the unfortunate state of feeling among

the present prominent advocates of the respective plans, amounting, in some instances, to almost personal hostility in our own community. It is much to be feared, therefore, that a long, and perhaps, indefinite period must elapse, before the unanimity of opinion so essential to its success, can be obtained.

The great desideratum of us all, is the most speedy and practical communication with the three principle interior sections of the country; and we should not shut our eyes to the present conflicting opinions and distracting private interests, or become wedded to our own peculiar views, when a great public good is at stake. Galveston, in the mean time suffers under the charge, however erroneous, of wishing to dictate to the State, and to establish a system for her especial, if not exclusive benefit: Besides pending the delay, which exhausts the patience and disappoints the hopes and expectations of the people, the private roads, already commenced and now in progress, must gain ground and become too strong in the public sympathy, to be ignored, or quietly put aside.

The Harrisburg road is completed to Richmond, The Lacy, or Henderson road, has received and is about to put down, 25 miles of iron, and the Houston company gives the promise of progress and success. These three roads point to the three great interior sections of the country and cover substantially the route, which a skillful Engineer, under the State Plan, would adopt, and they will undoubtedly go on with, or without State aid. The State therefore, would only damage herself, as well as the private company, by building intermediate, or parallel roads from the Bay, and hence, it seems to me, our true policy *might* be, under existing circumstances, to unite with the above specified roads to the extent that is necessary for the general object.

Suppose a loan on a first mortgage be made to these roads, under the ample security required by the bill of Mr. PALMER, of Houston, enough to finish them to certain fixed points in their respective routes, say: The Harrisburg to, or near Columbus, or La Grange, on the Colorado River; the Houston to, or near Washington, on the Brazos, and the Henderson, in the direction of Huntsville, to the crossing on the Trinity. Let the amount be sufficient to effect the object, for we wish promptness in this matter, as the loss of one year's business is of more importance than the saving of several years of interest; and if the loan is in jeopardy at the rate of \$8,000 to the mile, I am persuaded it would be scarcely more secure at the rate of 6,000.—The larger amount, therefore should not be objected to, if deemed necessary to accomplish the object in view.

When the roads have reached the points indicated, we might engraft the State plan upon them, and vigorously push them to the most important portions of our vast public domain.

Of course in every instance, the right would be reserved to the State either to buy out the roads she has thus aided, or engraft her own system on them as private roads just as her future interest, or policy might determine.

There is one consideration of no small importance connected with the fact, that these roads which have the termini and directions we most desire, are the work of private capital and enterprise, having a view to their own interests, irrespective of that of Galveston as a town.

The state coming to their assistance, because of their present progress, and with a view to engraft her own roads upon them,



would save Galveston the unpopularity and opposition from other quarters, should her great natural claims be pressed under the State Plan, for the present termini of the roads on the Bay. Much more might be said on these points, as well as the delay and conflicting interests embarrassing the commissioners in the selection of new routes and termini, but, I submit the above suggestions, crude as they may be, but in all sincerity, with the humble hope of quieting some objections and removing some obstacles, which seem to thicken upon us, in the way of accomplishing the great end we all have so much at heart.—*Galveston News*

From the Houston Telegraph.

#### NORTHERN TEXAS.

Perhaps no portion of Texas has been so much overlooked, and perhaps underrated by our people of this section, than the counties known as the northern or upper Trinity counties; and yet these counties are destined at no distant period, to claim and gain the precedence over all others as productive counties. The peculiarity of these counties is that while they are capable equally with our best river lands to produce the great staple of the South, cotton, that they are eminently adapted to the produce of all small grain. All the produce of the lower counties can be successfully grown, (except sugar) while they can equally compete with any country in the United States in the growth of wheat, oats, rye, barley and buckwheat. At present, the expense of getting to market prevents the produce of cotton. Wheat and other cereal grain is, therefore, the product.

We have traveled over this entire section of country, and have been struck with the great and rapid increase evident every where. The county of Dallas, for instance, which, but a few years ago, was held, as it were in defiance of the prowling savages, by the unceasing vigilance of its few frontier citizens, now has a voting population of nearly 1000, and nearly all farmers. The estimated amount of land now in cultivation is about 40,000 acres, one-third of which is in wheat, producing on an average from 20 to 25 bushels per acre. The extent of this county is about 900 square miles, equal to 900 sections of 640 acres of land each. Two-thirds or three-fourths of this land is tillable. At two-thirds, we have 384,000 acres; one half of this in wheat, yielding the low estimated average of 20 bushels per acre, shows a yield of 3,840,000 bushels, equal to about 640,000 barrels of flour. Of course we are only speculating, when we undertake to show what this *one county can be made to yield*; but we hesitate not to say that, with railway facilities, our speculations must fall short of the reality.

Well, we have 640,000 barrels of flour the product of one county. Wheat, it is well ascertained, ripens by the 1st of May, full six weeks earlier than in other wheat growing States, thus giving an advance market throughout the greater part of the South and West over all others.

It is estimated that in the county of Dallas alone, the past year, there was raised equal in amount to 25,000 barrels of flour, averaging \$10 per barrel, leaving two-thirds of the cultivated lands for corn and other grain. This year, *double* the yield is expected, notwithstanding a partial failure of the crop is certain.

We have cited the county of Dallas, not that it is the best, or that it has been most successful, but because her statistics are more full and reliable. Our observation while pass-

ing through the counties of the upper Trinity is that, while all are equal to Dallas, yet the counties of Collin, Grayson, and Fannin are much more desirable. Collin perhaps possesses more good land than any county in the State. Grayson is next, with superior advantages in both water and timber.

The emigration to these upper counties is immense, far exceeding our estimate. We here see boat load after boat load bringing their thousands, but they up there see their miles of emigrant wagons. Ours pass away and scatter over the beautiful prairies of the West—theirs settle their prairies in continuous fields as far as the eye can reach. Compactness of settlement seems to be a common sentiment.

We shall refer to this subject again, when we propose to show still further the greatness of these upper counties, and also what we of the coast should do to advance their interests and *our own*.

#### ROUTES TO CALIFORNIA.

We need not now restate the general considerations which urge upon our Government the policy and duty of immediately establishing an Overland Mail to California and Oregon; if any of our readers are still ignorant of them, the fault is not ours. But we may fairly ask them to consider this subject afresh in the light cast upon it by recent occurrences in Nicaragua and at Panama.

The Panama Railroad was a noble enterprise, and has been nobly pressed forward to completion. We can scarcely name anything else so well calculated to exalt our National prestige in the eyes of the civilized world. We are sure it should, and we trust it will, prove a lucrative investment to its stockholders. We believe its business calculated to increase year by year, until most of the trade with Europe of Western Mexico, the Pacific, and Western South America, will traverse this road. So the Nicaragua Transit enterprise has been prosecuted with spirit and courage, and has redounded to our credit as a people. We fervently hope for its safe deliverance from its present troubles.

But our Pacific Mail system is a mistake—a grand, dashing, magnificent one, if you will—but none the less a blunder at last. We never should have submitted, except for the moment, to the transportation of our domestic Mails from one section of the Union to another by an immensely circuitous route through a foreign country or countries. If forced to send them by the Isthmus for the first year, we should have been prepared to send them by the direct overland route the next season.

We are now paying some six hundred thousand dollars per annum for the transportation of our Pacific Mails. This is equal to the highest price paid by the Post-Office Department for the transportation of a daily mail each way on a first-class route over two thousand miles of railroad, equal to the distance from St. Louis to San Francisco. Now a letter written in Minnesota to a correspondent in Washington Territory, hardly more than a thousand miles due west, must come east to the Mississippi, down that river to Dubuque or Dunleith, east again to Chicago, Cleveland, Buffalo, and New-York; then south south-west to Aspinwall, cross the Isthmus to Panama, thence north north-west to San Francisco, thence by steamship again to the mouth of the Columbia, and thence east north-east to its destination, traveling some

eight thousand miles, or about the diameter of the globe, to reach a point hardly more than a thousand miles from that whence it set out on this protracted and devious wandering.

The practicability and the proper location of a Railroad from the Mississippi to the Pacific have been earnestly and very properly discussed. We believe the enterprise perfectly feasible—nay: we believe there will be at least three distinct lines of Railroad completed and in operation between Mr. Calhoun's "inland sea" and the great Western Ocean within the lifetime of many readers of this article. But, however and whenever these railroads may be constructed, they are not adapted to the immediate exigency. A Railroad to the Pacific is the work of years, and we need an overland mail forthwith. It should be advertised at once, contracted to the lowest responsible bidder in July, organized and run through expeditiously this Fall, hay cut and cured along the line wherever it exists, and grain sowed around the several stations for next year's service. Then, having everything in readiness, let the line be started regularly next May, and run weekly thenceforth from April to November inclusive, and monthly through the four least profitable months, until arrangements can be perfected for running it more frequently and regularly. Such a mail contract would secure the opening and constant improvement of a good wagon-road across the prairies and over the mountains; it would soon bring Kansas and California within hail of each other, and reduce the mail time between the Missouri and the Sacramento to ten or twelve days. Let the route be simply protected by U. S. dragoons or mounted volunteers, and a Telegraph will traverse it within two or three years, constructed by unaided private enterprise, and bringing New-York and San-Francisco within an hour's call.

Our Government is acting with commendable promptness on the information just received from the Isthmus; we trust it will act with commendable prudence also. The treatment of the Transit Company by Walker and his band of filibusters would disgrace a gang of pirates, and the conduct of the authorities at Panama, no matter though the riot was provoked by insolence or violence on the side of our people, was dastardly. But, so far as we from regarding those outrages with alarm in view of their ultimate consequences, that we should deem it a positive benefit to have the Isthmus rigidly closed against the transportation of our California mails and Government munitions at once and for ever.—*N. Y. Tribune, May 2.*

#### PACIFIC RAILROAD.

Hon. T. Butler King has written a long and able letter in advocacy of the Pacific Railroad. He says.—In whatever light we regard this work, it presses itself upon our consideration as indispensable to the safety and prosperity of the Union. If speedily completed, it secures to us all the advantages we now possess, and opens new and vast fields of enterprise. If long delayed, the Pacific States threaten to form a government for themselves. If war comes before its completion, they will probably be driven to that course; so that every consideration connected with our position as a people, urges the completion of this work. That it offers a profitable investment of capital, there cannot, it seems to me, be a doubt.—*Logan Gazette.*



## RAILROAD CONVENTION.

MESSRS. EDITORS:—I have noticed in several newspapers of late, the suggestion made that a Railroad Convention be called for the State at large, and some three or four different places named as suitable locations for holding said Convention.

We have had many Railroad Conventions and I know of know good result from them.

The Legislature meets in July, and if the action of the proposed Convention is for the purpose of advising that body as to the wishes of the people upon the subject of railroads, I think we can suggest a much more certain and speedy way of arriving at it.

I beg leave, therefore, most respectfully to suggest to the people of the various counties, that they proceed forthwith to the holding of county meetings and directly instruct their Representatives as to the course they should pursue.

I am well satisfied that if an expression of the people could be had in the way proposed, four fifths are in favor of the loan policy as being the only safe and reliable one for the State to adopt. The Buffalo Bayou, Brazos and Colorado, the Galveston, Houston and Henderson, the Galveston, Houston and Red River Railroads are all private enterprises rapidly proceeding, and all that is necessary to the completion of these and other important roads will be some aid from the State without her being a stockholder to the amount of one dollar. I might allude to another very recent indication of the disposition of the people to aid Railroads. At the late meeting of the Legislature, upon the petition of the citizens of Houston they were permitted to tax themselves for Railroad purposes. Upon submitting the question of Railroad tax or no tax, they decided to levy the tax, only fifteen votes were polled against it.

It will be recollected by those who were present at the Democratic Convention in January last, in which nearly every county in the State was represented by delegates, other than members of the Legislature, that a resolution was offered endorsing generally the course of Gov. Pease since filling the Executive chair; that many delegates stated at the time "that if it was to be construed as an approval or endorsement of Gov. Pease's views upon Railroad matters they should vote against the resolution."

Whereupon it was withdrawn, and upon the motion of Senator B. A. Palmer, it was resolved "that this Convention congratulate the people of Texas most heartily upon the election of E. M. Pease as Governor, and that while they differ with him in his views upon certain questions of State policy they most cordially commend him as a faithful and efficient officer." There was not a dissenting voice to the resolution quoted. Nothing could be more certain than, in that Convention representing a large majority of the voters of Texas, the Loan policy by the State was largely in the majority. I do not wish Messrs. Editors, to place Gov. Pease as an opponent to the loan bill, on the contrary, he has I believe, expressed himself in favor of it. If his own peculiar views could not be carried out, or even opposed by the people. It is not my purpose to discuss these matters at length. This article being now larger than I intended it should be.

Permit me in conclusion, to suggest that the people of old Harris call a meeting forthwith, lay before the public their views on this all important subject, recommending the other counties to do likewise. The time is growing short, the Legislature meets on the first Monday in July. This is the speediest and most direct way of getting an expression of the public will. Let us lead on at once. ONE OF HARRIS.

P. S.—MESSRS. EDITORS:—Since penning the above article, I have read your editorial and fully endorse your views in relation to the

abandoning any idea of a Railroad Convention, and still urge the calling of a county meeting forthwith.—*Houston Telegraph, March 4th, 1856.*

## THE COAL MINES.

We have published, during the last six weeks, accounts of the operations of the San Diego Coal Co., at their coal mine, near Point Loma. They have been engaged, as our readers are aware from those accounts, boring for the purpose of ascertaining the thickness of the vein and the formation of the different strata of coal, as well, as to test its quality. In order to save time and money they commenced boring at high water mark, at the foot of a high bluff, in which several small veins of coal were distinctly visible.

They concluded their prospecting labor on Saturday evening last and commenced sinking a shaft for the purpose of working the vein, which they are confident is of sufficient extent to warrant a further outlay of capital and prove highly remunerative when the mine is opened. From Mr. Parks, the collier employed by the Company, we received the following memoranda kept by him, showing the formation of the different strata passed through during the operation of boring:

Jan. 18th, 1856, commenced to bore at the level of the sea. Blue soft slate for 19 feet, then a strata of freestone two feet in thickness, in a seam of which we found salt water; we then passed through 1 foot of slate and struck a strata of coal 6 inches in thickness; then through 3 feet 6 inches of slate, when we struck a strata of coal 6 inches thick; then 16 feet 6 inches slate and 18 inches grey rock, when we struck fresh water. We then passed through 2 feet of slate and struck another strata of coal from 6 inches to 1 foot in thickness; next through 6 feet dark slate, grey rock 1 foot and 18 inches dark slate, when we again struck fresh water. We then came to a strata of 18 inches coal; then 6 inches very hard slate, and 6 inches coal; then 1 foot of dark slate resembling coal; then grey slate 3 feet, 1 foot dark slate and 3 feet grey rock; then through 6 inches of dark slate, when we again struck a strata of coal 6 inches; then through 4 feet of dark slate, 10 inches grey rock, 3 feet of dark slate, 1 foot soft sand stone, 4 feet of slate and 2 feet soft grey rock, when we came across another stream of fresh water. We then passed through 6 inches of slate and struck a strata of coal 4 feet 6 inches in thickness. Whole depth bored 86 feet 6 inches.

Mr Parks who has much experience in coal mining, is of the opinion that the different veins will increase in size as they dip into the bank, and from the test he has made of the quality of the coal, is confident it will well pay the investment of capital.

The Pacific Coal Co., who have a vein of coal near Solidad, ten or twelve miles from town, and which they believe will prove to be highly valuable, have commenced their prospecting operations, and should they turn out to be favorable, will immediately open the vein.

The coal from these two different localities has been thoroughly tested and pronounced to be of superior quality, burning freely, emitting but little smoke and leaving but a trifling cinder.—*From the San Diego Herald.*

The Moseley Tubular Bridge built for the commissioners of Butler county was tested two weeks ago & gave the most perfect satisfaction.

✍ In our next issue, we will present our readers with a railroad map of the State, engraved according to a drawing sketched by Prof. FORSHEY: and we have procured it to be engraved, at the request of some of our citizens. This Map exhibits at one view, that system of roads recommended, some three years ago, by the citizens of Galveston, as the one best calculated to accommodate the whole State, at the least possible expense. It will be seen by this map, as Prof. FORSHEY says, that about one thousand miles of railroad may be so constructed, that not a citizen of the State, (except in the extreme Southwestern and Southeastern corners) will have to haul his crop more than fifty miles at farthest, to place it on the freight cars of a railroad, while much the larger portion of our present population will be much nearer. The map is intended more especially to illustrate Mr SULLIVAN's bill, or the State plan, as proposed by him.—*Galveston News.*

A PACIFIC RAILROAD.—The New York Sun says:

"A substantial and decided step has, we learn, been taken in the direction of a Railroad to the Pacific on the Texas Route.—It is known that the State of Texas gave, with the charter of the Western Texas Railroad, the munificent grant of 10,400 acres of land for every mile of the road constructed. This amount of land of great fertility and good general advantages, is sufficient of itself to build the road and put it in working order. Under these favorable circumstances the Western Texas Company contracted and signed on Saturday last an agreement with responsible men in Ohio and Texas for the construction of the first section of the road. It runs in the partly settled country between the Trinity and Red Rivers, and is to be ready for the rails on or before the first of August next.

ELECTION OF DIRECTORS OF THE MISSOURI AND CALIFORNIA OVERLAND STAGE COMPANY.—At a meeting of stockholders held at the Banking House of Messrs. Lucas & Simonds on Saturday the 22d ult., for the purpose of electing Directors for the ensuing year of the Missouri and California Overland Mail and Transportation Company, \$175,000 of stock was voted and resulted in the choice of the following named gentlemen.

James H. Lucas, Robert Campbell, John H. Lightner, S. B. Churchill, D. D. Mitchell, Wm. Gilpin, Adolphus Mier, Thornton Grimsley, Francis P. Blair, Jr.—*Missouri State Journal, April 17, 1856.*

EXPORTS FROM THE PORT OF PENSACOLA IN FEBRUARY, 1856.—The following statement, from the books of the Custom House, shows the exports from this Port during the last month:

|                                   | Feet.     |
|-----------------------------------|-----------|
| Lumber—to New Orleans.....        | 1,090,225 |
| " to other ports in the U. S..... | 385,000   |
| " to foreign ports.....           | 698,061   |
| Total.....                        | 2,173,286 |
|                                   | Number.   |
| Laths—to New Orleans.....         | 108,000   |
| " to other ports—none.....        |           |
| Shingles—to New Orleans.....      | 35,000    |
| " to other ports—none.....        |           |
| Cow Hides—to New Orleans.....     | 229       |
| " to other ports—none.....        |           |
| Bricks—to Tortugas.....           | 105,000   |
| Cotton—to New Orleans.....        | 474       |
| " to other points—none.....       |           |

We learn that the Texas Western Railroad Company have purchased 1000 tons of iron for their road, to be shipped immediately.



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, MAY 19, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, . . . . . EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, . . . . . MONDAY, MAY 19.

#### WHAT SHALL BE DONE FOR A HIGHWAY TO THE PACIFIC?

We confess ourselves unable to reply to this in any other manner than as we have done,—that Congress take *prompt and efficient measures to construct it, by a grant of lands*. We are impelled to repeat this again, by seeing some things recently done by Congress. Within a few days that body has made large grants of lands to the States of Iowa, Florida, and Alabama, on the principle of equalizing the grants to Railroads within those States, with that to others in the West and South. We are glad this has been done and hope the lands will be used in such a way as to secure the Railroads they are intended to construct. It will benefit not only those States, but all parts of the country, which communicate with them. But if the principle which Congress has gone upon be correct, why does it not apply to all parts of the country where the Government has a proprietary interest? If this be good doctrine for Iowa, why not for New Mexico, for Utah, and especially for California, Oregon and Washington? It certainly is. But farther, if the Government is interested in improving and advancing its own lands, (as it certainly is,) in what way can they accomplish it but this? In what way can they make available the vast mines of silver, copper, and other valuable minerals, in the Gadsden Purchase; in California; and portions of New Mexico? The truth is, that the development of natural resources, the increase of population, of agriculture, manufactures, and wealth generally, will return to the nation ten times the expenditure required for a Pacific Railroad. And what is the question of route, compared with this? There must ultimately be two or three routes, and all of them can be reconciled in the way pointed out in the *Record* last week,—a Bill, which it is supposed will be brought before Congress, granting aid to the Iowa and Missouri Roads to a common point; thence by a common track to the Pacific; and granting aid also to the Texas, or Southern Route, which we take it, must be done, to secure success; as well as on its own intrinsic merits. If Congress do act on this subject, they should take it up early and act decisively. Every year diminishes the amount of good lands applicable to

this purpose; and every year increases tenfold the need of the road. The Pacific Road is of a hundred fold the consequence that the Presidential election is, and yet we see members of Congress and politicians distressing themselves about *who* shall be President. In other words, they are distressing themselves about *who* shall have the offices—the spoils! Alas! for that country, whose honors and emoluments are given, not for merit, but as the prizes of a partisan strife; whose great public interests are neglected that the servants of the people may live upon their spoils. There is a play somewhere, called “High Life below Stairs,”—in which the servants below hold balls and drink wine, while their master above lives frugally, and pays the fiddler. The scenes at Washington remind us strongly of this comedy. The country pays the piper, while they are dancing and playing. We have not the least doubt that many members of Congress are very good sort of people and intend to do well. But, we do know that Congress has been nearly six months in session; that it was two months making a Speaker; that the Deficiency Bill has just passed, and that the Pacific Road Bill is *not even reported in the House!* With all due submission, we think the world will be troubled to find another such a *slow team!* But, this is aside from our purpose, which is merely to say that Congress having conceded *every principle* involved in the construction of a Pacific Road, they certainly, in consideration of the great interests involved, should have the decency to propose some plan, and act upon it.

#### INTERNAL IMPROVEMENTS OF TEXAS.

There are various plans for the internal improvement of Texas submitted to the consideration of the Legislature and people of Texas. There are two general *principles* which must govern the whole, and settle the whole action, if it ever be settled wisely and prudently. To us there is no difficulty in the problem. The laws of trade and the physical geography of the country settle both.

The first of them is the *financial* problem, and on this we expressed our opinion in the last number of the *Record*. We do not believe Texas can come before the world and borrow money like Ohio and Kentucky, simply on *State* credit, at anything like moderate interest. If she is to aid railroads, rivers, and all interests which require it, she must soon be in debt, even beyond Virginia, which is scarcely able to bear it. The *amount* required will be about *four* times as much, ultimately

as that needed in Virginia; for Virginia has 60,000 square miles, and Texas 250,000 square miles. Texas must, therefore, fail in the *object* intended, or she must advance her credit to an extent which she is unable to bear, and thus depreciate it in the market. The financial plan, therefore, which we would adopt is this: 1. To continue the grant of lands already made to those roads, which are *commenced*. This will be an ultimate basis of credit to the roads themselves. 2. To this add a *State loan per mile*, precisely on the plan of Tennessee, and which, in practice, works better than the plan of any other State in the country. Tennessee has now eight or ten good lines of railroad in course of construction, by this State loan of \$10,000 per mile, and which the State does not give till a section of a certain length is actually ready for the iron. Texas need not advance so large a loan, inasmuch as she first grants land. The proposition of \$8,000 per mile is about right. The gain of the State is palpable. First, and greatest, the *State* need not advance but *one-third* the credit in this instance, which she would in the other. If we suppose, for example, that the State, by this plan (of so much *loan* per mile), will advance a credit of \$10,000,000, she must (if the *State* makes the road) advance \$30,000,000 on the other. It is palpable that Texas may sustain the former amount, but she *cannot* the last. By the *State* plan, not half the railroads will be made which are required; while by the *loan* plan the railroads will be able to make themselves.

*Secondly.*—What improvements are required in Texas? A map of Texas shows plainly that the State is composed of *two physical systems*. From near about the central part of the State, several *ravines* run to the Gulf ports, making these harbors, and directing the trade of the lower part of the State towards the Gulf. But if we consider the heads of navigation in the State as making a natural line, which they do, all north of that is a great plain, or high plateau, in which these rivers rise, and to the north of which is the Red River. This northern part, which has really *no* navigable streams, has no outlet and can have none except by railroads. Now this northern part comprehends *two-thirds* the whole State, and demands improvement more than any other. How else is it to be settled? On the east, it must have an outlet on the Mississippi; and on the west, by the valley of the Rio Grande. Besides this, on this plain lies properly, the route of the great Pacific Railroad; which, if once gained to Texas, will be worth incalculable wealth.



On this state of fact, the true policy of Texas is plain. She should aim at making one or more through railroad lines—east and west—from the Mississippi to the Rio Grande. This she may do by the Loan Bill, \$8,000 per mile. Then she should improve the Rivers which run to the Gulf, as far as they are navigable; and lastly, she should aid (as would be done in the same general Bill), the construction of such short lines of railroads, running to Galveston and other parts of the Gulf as may be necessary to secure these ports their proper trade. In this manner there will be no collision of interests, and the whole State be provided with all the railroads and navigation which is necessary for commercial facilities. She will improve the State, build up the Gulf ports, and hold the Great Highway between the Atlantic and the Pacific. What is most important to the State is, that it can be all accomplished for about *one-third* what will be required on the State Plan. We have made an estimate of the cost, as follows:

|   |              |
|---|--------------|
| 1500 miles of Railroad at \$8,000 per mile..... | \$12,000,000 |
| Rivers Improved.....                            | 1,500,000    |
| Aggregate.....                                  | \$13,500,000 |

#### State Plan.

1500 miles of Railroad at \$30,000 per mile... \$45,000,000

Now it is palpable enough that the State may stand the former sum, but cannot stand the latter. Let the prudent men of the State then unite their interests on a common plan of *State Loan* per mile to railroads and the improvement of rivers. With that she can succeed, and with the State Plan she will in three years destroy her credit.

#### MOSELEY'S TUBULAR WROUGHT IRON ARCH BRIDGE.

We witnessed, on Tuesday, the test of a 49 feet Railroad Bridge, recently erected by the Moseley Bridge Company, at Morrow, to test the practical utility of their system of bridging, as applied to railroad purposes. The great feature of this structure is a light Tubular Wrought Iron Arch, composed of double thickness of plate iron, disposed in the shape of a continuous triangular tube, and supporting the road way by means of radial suspension rods. The section of the tube may be represented thus—



And the whole arch forms the following appearance :



At the hips of the arch there is a vertical plate, running from the apex of the triangle

to the centre of the base, and securely bolted, to give additional stiffness to the arch, as is represented in the following section :



The whole arrangement of the arch is one which gives all the advantages of the material used. And when properly carried out in all its details, forms a bridge of great strength.

The bridge to which we referred is located at Morrow, on a side track of the Little Miami Railroad. It has a span of 49 feet. The rise of the arch is 10 feet 5 inches. The extreme dimensions of the tube, including the comb at the apex and the flanges at the base, are 15 inches deep on the side, and 12 inches broad on the base of the triangle. The gross weight of the whole bridge is 10,000 lbs., and that of each arch about 4,000. The roadway is 14 feet wide. The suspension rods are made of  $\frac{3}{4}$  inch round iron, and the stirrups which suspend them over the arch are  $2 \times \frac{1}{2}$  inch flat iron. The foundation on which the bridge rested was timber laid in the gravel under the foot of each arch. There were a number of scientific and business men from Cincinnati present, to witness the effect of the tests.

The first test to which the bridge was subjected was the crossing of a 26 ton locomotive with a heavy train of 40 cars, mostly eight wheeled. As the locomotive crossed the bridge, the foundation settled about an inch, causing a corresponding settling in the whole structure. The long train which followed produced no further effect than to show the natural elasticity of the bridge. The next test was the crossing of a 19 ton locomotive, alone and with a train, at rates of speed varying from 5 to 30 miles an hour. Each time the train crossed, the foundation became more settled, and the bridge in proportion exhibited more firmness and solidity. While on the bridge, and running at speed, the brakes were applied to the trains, and the wheels perfectly locked dragged over the bridge. The crossing and recrossing of these trains was the whole of the test at this time, but we learned that a week ago, when the bridge was first completed, the main track was placed four inches above the level of the bridge track, and a locomotive driven on this at a high rate of speed. This is the most severe test to which a structure of that kind can be subjected, and much more so than it is practically expected to undergo.

The gentlemen present signed the following certificate in acknowledgment of the success of the trial :

MORROW, May 13th, 1856.

We the undersigned having been present at the test of a Moseley Tubular Wrought Iron Arched Bridge—of 49 feet span, recently erected at Morrow, on the Little Miami Railroad—certify, That they witnessed the trial of the Bridge by running heavy freight trains frequently over it, at rates of speed varying from five to thirty miles per hour; and under circumstances which would amply test the strength of the Structure, and that in their opinion the Tubular Wrought Iron Arch applied to the purposes of Bridging, is the strongest and best arrangement of material that they have yet seen, and they deem these Arches to be eminently suited to purposes of Railroad Bridging.

THOS. G. GAYLORD,  
S. P. HEINTZELMAN,  
EDGAR CONKLING,  
SAMUEL A. SARGENT,  
W. WRIGHTSON,  
D. E. BISHOP, C. E.  
S. H. HUNT, M. D.

For ourselves we were quite satisfied that the Tubular Arch is the best form that we have seen to give the greatest strength from the least material. And we believe that iron bridges must become pre-eminently the railroad bridges of the country.

#### LA SALLE AND LAFAYETTE R. R. CO.

At a meeting of the stockholders of this company, lately held in this city, the following gentlemen were elected officers for the ensuing year :

Alexander Campbell, President.

R. B. Mason, Vice President.

Churchill Coffing, Secretary.

The Board of Directors consists of Alexander Campbell, Alex. Cruickshank, R. G. Parks, A. B. Hitchcock, David Brown and Churchill Coffing.

This is a very important line of road, and we hope to see it speedily completed. It is to connect La Salle and the country west with Cincinnati and the different points on the Ohio, an almost air-line route, diminishing the distance over one hundred miles from the routes now traveled. The survey has been completed, and the estimates are very favorable to its cheap construction. The grade is an easy one, being almost entirely through a prairie country. It is mostly through a thinly settled portion of the State, which only requires the facilities of a railroad to develop its agricultural and mineral resources. On the line are many valuable deposits of bituminous and cannel coal, which can only be brought into market on the completion of the road.—*La Salle Press*.

The above route will doubtless be an air-line to LaFayette. It will, by making a ship-de-tour at Dwight, on the Chicago, Alton and St. Louis Road, make a very important crossing, and another equally important crossing on the Chicago Branch of the Illinois Central Railroad, between Chelanse and Ashkum. From La Fayette the route to Cincinnati is almost an air-line, by the La Fayette & Indianapolis and Cincinnati & Indianapolis Roads.

It will shorten the distance to the great western outlet, Iowa, inasmuch as the distance from Toledo via the Wabash, St. Louis, To-



ledo & Illinois Railroad, to La Fayette, and thence on the La Salle & La Fayette Railroad to this point, and on the Rock Island Road to Iowa, will be much shorter than by the Michigan and Illinois roads to Chicago, as at present traveled.—*Peru Chron.*, May 1.

#### GOLD IN THE GREAT SAHARA.

According to the *Center Algeria*, the great Desert of Sahara, which it states is not so uninhabitable as has been described, is rich in gold dust. In the month of January last, the Tauregs, a race inhabiting the Desert, sent a deputation to Governor Gen. Randon, proffering their friendship and their protection to trading caravans coming to their country, or passing through to the Soudan, or to the land of the Niger. Among the articles which they named as inducements for trading caravans to visit them, were gold dust, ivory, fragrant gums, &c.

Another Algerian journal, the *Akhbar*, in confirmation of the report of auriferous deposits in the Sahara, quotes the following passage from the works of Ebu-Khaldon, the historian of the Berbers:

"The King of Mailli (city of the Eastern Sahara) arrived at Cairo with eighty loads of gold dust, each of three hundred weight. A well informed man of Sedschelmassa related to the king's interpreter that in the country of Kaskas, (among the blacks,) the Sultan Dshata, successor of Mousa Mussa, sold the famous rock of gold, which was the most remarkable treasure of the sovereign of Mailli. It weighed twenty hundred pounds, and was kept in the same condition as when first discovered."

#### CLEVELAND & CHATTANOOGA R. R., TENN.

The following is from a letter bearing date March 31, from Maj. Wallace, President of the East Tennessee and Georgia Railroad.

I am now engaged in building the cut-off from Cleveland to Chattanooga, 28½ miles in length, by which we shorten the distance between Lynchburg and Memphis and Nashville, 40 miles. But for a tunnel of some 900 feet I would not fear to complete it in twelve months. It is all heavy work, yet I do not intend to be the last in getting through. I start to New York this morning to procure the rails. From Chattanooga to Nashville, you are aware, the line is complete. From Chattanooga to Memphis, less than seventy miles are to finish, and much of the grading done.

The indefatigable President, Samuel Tate, will run it through this year if it is possible for man to accomplish it. His means are ample.

The remaining link to perfect this central route is the East Tennessee & Virginia Railroad, leading from this point to the junction with your road at Virginia & Tennessee line. The length is about 130 miles some 25 of which is in use, and grading and bridging on the remainder well advanced. The progress on this work has been rather slow, yet their means have been used with great economy.

Our Legislature has aided them with great liberality; their means are now abundant, and I have great confidence in their making extra exertions to complete their road at an early

day. I cannot however, give you an approximate idea of the time.

I know you are looking forward to a heavy travel when Tennessee shall have completed her part of this great line of Railroad, but let me admonish you in time that, as yet, you have hardly formed any correct estimate of the immense multitude you have to provide for daily. The whole traveling world South and West of us, even to the Gulf of Mexico and the shores of the Atlantic, will be poured in on you without intermission.

#### IMPROVEMENT OF THE MISSISSIPPI.

##### BAYOU MANCHAC—GRAND JUNCTION CANAL.

We have seen a copy of some resolutions adopted by the last session of the Mississippi Legislature, relative to the re-opening of water communication between the Mississippi river and the Gulf of Mexico, by way of Lake Pontchartrain and Lake Borgne. The preamble to the resolutions refers to the closing of Bayou Manchac and the subsequent efforts made to have it restored to its former uses and reviews the considerations why that or some similar and equivalent channel should be opened. The Bayou Manchac, as the preamble states, was once a navigable water-course, connecting the Mississippi river with the Gulf of Mexico through the Lake. Maurepus and Pontchartrain; and under the old Spanish regime in the Province of Louisiana it was used in commerce, and continued so to be used after its acquisition by the United States, until it was closed by Gen. Jackson, then in command of that quarter. This closure was a military measure designed to protect the city of New Orleans against invasion by the English in 1814-15.

At a subsequent period the dam at the mouth of the Manchac was destroyed by the caving of the river, and on account of the private interests exposed to injury by the sudden inrush of water the crevasse was closed by the State. nevertheless the States of Mississippi and Alabama interested in having this bayou restored to *statu quo*, endeavored to induce Congress to adopt measures to that end, on the ground that by the ordinance under which Louisiana was admitted into the Union it was provided as a condition of admission, that all the navigable waters in that State leading into the Gulf of Mexico should be kept open free to the commerce of the people of all the States. Congress, however, had declined to take any action in the matter; and so it stood when the resolutions above mentioned were adopted.

In view of such a state of things, the preamble refers to the Grand Junction Canal, projected by Col. Richard A. Stewart and his associates, for connecting the navigation of the Mississippi river and Gulf of Mexico, by an artificial channel of greater capacity, more direct, and much shorter in length than the closed-up Manchac, as an equivalent which would essentially supersede the re-opening of that old communication.

The resolutions which follow this preambular presentment of facts, besides embracing the leading corollaries of the premises, convey a special instruction to the Mississippi delegation in Congress to use their best endeavors to induce Congress to make a reasonable appropriation in aid of the construction of the canal. We give them as follows;

Wherefore, Resolved, By the State of Mississippi, that it is the opinion of this Legislature that the commercial interest of the people of the United States, and of this State espe-

cially, will be much better promoted by the successful completion of said projected Canal, than by the reopening of the Bayou Manchac.

Resolved, That in the opinion of this Legislature, the establishment of said Canal in the manner proposed, would be a satisfactory substitute to the people of this State for the reopening of said Bayou.

Resolved, That in the opinion of this Legislature, the Government of the United States is reasonably bound to restore to the people of the State and of the United States the navigation, as existing at the date of the ordinance admitting Louisiana into the Union, or to provide an equivalent navigation effecting the same end and object; and that this duty would be better exerted, and the public interest better subserved by an expenditure of equal amount to aid in the construction of this canal as would be otherwise requisite to restore the navigation of said Bayou.

Resolved, That our Senators and Representatives in Congress are hereby requested to use their best endeavors to procure an appropriation for such reasonable amount to aid in the construction of said canal under the plan now devised, as Congress is justly bound otherwise to make for repairs to the ancient channel of communication so heretofore obstructed under national authority.

#### THE PACIFIC RAILROAD.

In our issue of the 17th we spoke of the necessity of this road to preserve the Union, by cementing by this bond the different parts of our country, which is fast becoming unwieldy, on account of the comparatively feeble connection between the Atlantic and Pacific States. We shall now proceed to discuss the necessity of the road under our 2d head, viz: To protect ourselves against foreign invasion.

The spirit that we have lately seen manifested in the East by the combined powers of Europe, towards a nation whose greatest sin was its prosperity and rapidly increasing strength, is still powerful, and we laboring under the same sin, only a pretext is needed to call forth the manifestations of that towards ourselves. It is but lately that our friendly relations with England and Spain were near a rupture, and we shall ever stand in danger of it so long as these powers have their possessions on our borders, and on our coasts. England is jealous of us, and ever ready to demand the redress of real or imaginary wrongs, and though all reflecting persons on both sides of the water would deprecate such a suicidal war, still we are liable to be so involved by the course of a weak President, or a hot-headed ministry. This being the case, what would be our position in such an event? Could we with our munitions of war stored as they are on our Atlantic coast, repel an invasion on our Pacific? and would we not first be struck in this our weakest part? Should war be declared between this country and Great Britain, her fleet, in which lies her greatest strength, would sweep the Gulf of Mexico of all our transports, while she would ravage and wrest from us, in our helplessness, some of our richest possessions. It is true that we are powerful enough to cope successfully with any nation under the sun, when we can use our power; but of what avail is that power, when it will take six months to transport it from one section of the country to the other while the enemy can do the same in one? With the railroad it can be done in less than a week, with but a fraction of the cost, leaving our armies fresh for the contest, our munitions of war in as good condition as when taken from the arsenal. Should war occur, could the people hold our Government guiltless for neglecting so great a means of safety and defense? The people demand it. Our common safety demands it. The great interests of the community demands it. Then let our legislators cease to wrangle and debate, all to no purpose, on this sub-



ject, and take some efficient means to secure the success of this great National enterprise. Let this link which is to bind two great communities, united in the natural bonds of the same blood, origin and tie, be made. Let this distance between fathers, brothers, mothers and sisters be lessened. Let the powerful lever of public opinion be set in motion never to rest till this great end be accomplished.—*Courier—New Castle, Ind.*

#### GOVERNMENTAL AID IN CONNECTION WITH THE CONSTRUCTION OF THE ROAD—INDIANS ON THE ROUTE.

*Incidental aids to the construction of the road.*—Government aid to be given to all through roads in grants of alternate sections of land, with the usual restrictions. The road should not, however, be a government road, maintained and managed by the general government. It will only entail great expenditure, lead to delay, and call into exercise a power deemed by many to be unconstitutional. The road to be built by private enterprise; the business capacity, great skill developed in capitalists, engineers and contractors, by our railroad experience, availed of, and the whole operation to be pushed with vigor; Irish laborers in the eastern portion, laborers from the Sandwich Islands and China in the western; railroad iron to be brought to the road by the connection with Lake Superior; every effort made to promote settlement on the road, to furnish supplies, and cause a way travel to spring up.

The cost of the road will be greatly diminished by grants of land being availed of to encourage colonization, and the methods adopted by the contractors to maintain the working force and procure supplies. The supplies of meat for all the laborers on the line east of the mountains, except for the portion east of the Bois des Sioux, will be furnished from the plains. The inexhaustible herds of buffalo will supply amply the whole force till the road is completed. The Red river hunters, two thousand men, five thousand men, women, and children, and eighteen hundred carts, range from the Mouse River valley to the Red River of the North, and each year in June and July, and again in October and November, carry off to the settlements at Pembina, and in English territory, at least 2,500,000 pounds of buffalo meat, dried, or in the shape of pemican. These people are simple-hearted, honest, and industrious, and would make good citizens. They are well affected towards the American government; would, if the furnishing of the meat were intrusted to them, settle on our soil; and they could with ease, for many years, supply a much larger amount of meat, and at very moderate rates. The Indians of Western Minnesota, the Gros Ventres, and the Blackfeet, would also supply considerable quantities. The laborers with their families should be induced to settle on the line of the road; and the company, in the disposition of their grants, should give to them and to settlers small lots contiguous to those reserved by government, which would thus be in demand, and could be sold at an early period at remunerative rates. Soon population would increase, a thoroughfare be opened and the company's reserved lots could be disposed of to settlers at a considerable advance. I would recommend that the working force, once on the line of the road, be kept there with their families throughout the year, and thus, by a course similar to the above, be induced to settle. This course once carried out, laborers would offer for the work in suit-

able numbers, and, on the completion of the road, there would be flourishing settlements on the entire line.

But in an incidental way, under the acknowledged sphere of action of the general government, aid can be furnished these roads.

As preliminary to the subject of governmental action, the following observations are submitted in reference to the Indian tribes on the route of the exploration:

The Indians on the line of the route are the Chippewas, Winnebagoes, Sioux, Assiniboin, Crees, Gros Ventres, Bloods, Piegiens, Blackfeet, and Crows; and west of the mountains, the Flatheads, Kootenai, Pend d'Oreilles, Cœur d'Alenes, Spokanes, Nez Perces, Peluses, Cayuses, Wallah-Wallahs, Dalles, Cascades, Klikitats, Yakimas, Pisuouse, Okinakanes, Colvilles, and some forty tribes west of the Cascade mountains. The only white inhabitants are the traders and employees of the Fur Companies, licensed traders in the unorganized portion of the Territory. East of the Cascades, the employees of the Hudson's Bay Company, and the Red River half-breeds living near the boundary line and near Red river, a portion in America and a portion in English territory.

During the whole course of the exploration the Indians were uniformly friendly, and not a single difficulty in all these extended operations occurred. They were met in council throughout the route, and presents were given to them, with kind words from the Great Father. Our intercourse with the several tribes of the Blackfeet nation was especially of the most cordial character, and for the last ten years have the traders of the Fur Company gone alone into their camps with large quantities of goods in entire safety. These Blackfeet may be considered the Arabs of the North. They having the adventurous spirit of that ancient people, make long journeys in quest of spoils or scalps, and extend their depredations to Snake river, to the emigrant trail, and to New Mexico. Bringing a portion of them into council at Fort Benton, they promised, individually, to cease sending their war parties against other tribes, and to respect all whites traveling through their country, and to use their influence to induce the whole nation to do likewise.

This promise has been respected, and the chiefs present at the council have used their utmost influence to dissuade their young men from going to war. Yet for many years there have not been so many in the tribe, many alleging that this year will be their last opportunity to steal horses, and they must make the most of it. Should a council be held at or near Fort Benton for a general pacification of the Indian tribes on both sides of the Rocky mountains, not included in existing arrangements, I am satisfied that, with the support of the military force, it will, in connection with subsequent measures, tend to reclaim them and make of them useful members of the State. In the interviews which Mr. Doty, in charge of the meteorological post at Fort Benton, has had with them at their camps in the vicinity of that place, it will be seen they are exceedingly pleased both with the council and the idea of a farm. The improvement which has already taken place in their general character is the guarantee of continued improvement.

I concur in the views of Mr. Doty, given in the Indian portion of this report, to which I will call your particular attention. At this moment it is certain a man can go about throughout their territory without molesta-

tion, except in the contingency of being mistaken at night for an Indian.

The report of Lieutenant Mullen will be found full of interest in reference to the honest and brave Indians immediately west of the Rocky mountains, and I cannot but respond to all the warmth and energy of his appeal to the government for their protection. Not doubting but a council will be held, they bear in patience every injury; and the return of three horses belonging to Mr. Doty's train, taken by mistake in reprisals for horses stolen by the Blackfeet, by the Pend d'Oreille chief and five men, I look upon as an act of heroism. They traveled five days through Blackfeet war parties, and delivered them up at Fort Benton, asking no reward, and expressing much sorrow and shame at the act; and this was done by the unanimous vote of the whole tribe in council. Nearly all the Indians east of the Cascades are sincere Christians, mostly Catholics; but the Spokanes and a part of the Nez Perces are Protestants. The interesting report of Mr. Gibbs to Captain McClellan, in charge of the exploration and survey of the Cascades, will, in connection with the reports of Dr. Suckley, Lieutenant Mullen, and Mr. Doty, give a good general view of the Indians on the route from the Blackfeet nation to the Pacific.

It may be remarked, however, that the exploration has had extraordinary facilities for collecting information in relation to the Indian tribes, and has enabled me to come to conclusions in reference to the general policy that should be pursued towards them. The mountain Indians differ entirely in their character and habits from those of the streams and the shores of the ocean. The latter subsist on fish and berries, raising some potatoes, but owning few horses or cattle. They are debased in character, and are rapidly reducing in numbers in consequence of their vices and their penury. The mountain Indians, including all east of the Cascades except those of the lower Columbia, own horses and cattle, have small crops of wheat, as well as potatoes, are moral in their habits—polygamy having been abandoned by a majority of the tribes—and for subsistence depend in part upon the chase, resorting to the plains east of the Missouri for the meat of the buffalo. Large numbers of them are expert hunters, particularly the Flatheads, Nez Perces, Cœur d'Alenes, Pend d'Oreilles, and Spokanes. Nearly all the country, indeed, east of the Cascades, is a good grazing country, and most of it is well adapted to agriculture. My own personal observations were quite considerable in this respect, including the country occupied by the Flatheads, Cœur d'Alenes, Spokanes, and the country thence to Colville, and that occupied by the Wallah-Wallahs. Actual settlers invariably speak well of the country occupied by them—the St. Mary's, Colville, Spokane, Wallah-Wallah valleys, and the region near the valleys of the Yakima and its tributaries. The desire of the Nez Perces and Spokanes for a grist-mill in their territories, towards which each family has offered to contribute a horse, is the most significant exemplification of their desire to till the soil. Some of the same Indians east of the Cascades are very poor, especially the Kootenai; and the project of introducing salmon into the upper Columbia by blasting a race-way, suggested by Dr. Suckley, is worthy of special attention. The Pend d'Oreilles and Cœur d'Alenes subsist much upon deer, the former taking in one hunt, in the winter of 1852-3, eight hundred, and the latter four



hundred and fifty. The straits to which these Indians will be reduced in two years, by the entire disappearance of game, is referred to by Dr. Suckley, and measures ought not to be put off to provide for them. Several of these tribes are rich in horses and cattle, and are famous for their rapid movements. A Black foot brave, "the white man's hare," told me, on the Big Muddy river, that he stole the first Flathead horse he came across—it was sure to be a good one. They own still many good horses, though their number and quality have been reduced in consequence of their losses. The Nez Perces are rich, both in horses and in cattle; and the hospitable reception they extended to the members of the exploration passing through their country, taking care of a man lost from Lieutenant Macfeely's party, binding up his wounds, and giving him the means of reaching the nearest settler, Mr. Craig, and receiving into their lodges for some days the members of Mr. Tinkham's party, after their arduous winter examination of the snows of the Bitter Root, show that they are still the good Indians of the time of Lewis and Clark.

[TO BE CONTINUED.]

## Opinions of the Press.

From the Daily Columbian.

### PACIFIC RAILROAD—CONGRESS.

A great many petitions have been presented to Congress for a railroad to the Pacific. The idea has been long before the public mind, and such a work is undoubtedly demanded by commercial exigencies. Various bills are before Congress for the construction of such a road, by means of grants of lands; and all have warm supporters. The great difficulty in the way has been the opposite local interests of different section of the country. The people on the line of the lakes want a road on the forty-eight parallel, to Puget's Sound. The people of Missouri, under the lead of Benton, want a road by the Platte River; and the people of the South want one through Texas. Three roads where one is sufficient is rather too much; and the great point is to reconcile these interests. We see by the correspondence of the *New York Times* that the House Committee are likely to prepare a bill with this view. The following extract gives the features of the bill.

The Pacific Railroad Committee of the House has nearly or quite agreed upon a report at last, and the bill they propose is entirely different in its details from that which was entertained a month ago. The present plan is to grant six sections of land to the mile to each of the great railroad companies now carrying roads Westward through Iowa and Missouri, (eight in number,) to aid them in extending their several roads to a common junction at Fort Kearney, on the Platte River—and then give them jointly thirty sections to the mile to aid in building a single main trunk road from that point to the navigable waters of the Pacific. Agents in behalf of several of these roads are here asking to be permitted to carry out their plan of constructing the Pacific Railroad; and it is urged that the scheme will combine large inducements in its favor. The bill also proposes to make a grant of thirty sections of land to the mile to C. K. Garrison, of San Francisco, and others, for the construction of a road from the Mississippi River, South of the 38th parallel, to San Francisco, and to any other point they may select on the Pacific Ocean.

The bill, in the main, is the same as the plan recently proposed in the *Railroad Record* of this city, which was to concentrate the Northern and middle lines, and grant *thirty sections* for that line and for the South. Such a combination of interests is probably the only mode in which any action can be obtained in Congress. But there is something in this plan which needs a little explanation. who are the "others" associated with Mr. C. K. Garrison? and why should he in particular be the grantee?

Mr. Garrison, if we have heard correctly, is largely interested in the Steamship Lines, and it happens very curiously that this class of gentlemen have been the recipients of all the great government contracts. A pretty thing, too, they have made of it. Look at the "Sloop Contract," the "Collins Contract", and the Vanderbilt difficulties. Steamship owners seem to be the happy favorites of the Government. We say nothing against Mr. Garrison, for we know nothing. But we mean to say, that in selecting Trustees for a great work, it would be well enough to avoid the appearance of giving anything to Steamship owners and great contractors. *Farming out* its own business was one of the last resources of the corrupt Monarchy of France before the Revolution.

We see no objection to putting the Southern route in the hands of Trustees (for it seems to be confined to that route,) but they should be disinterested men. Another thing should be noted, in connection with this subject. The "Texas Western Railroad Company" has a grant from Texas of *sixteen sections* per mile, from Shreveport to El Paso—780 miles. It is very obvious, that if to this were added the Government grant of *thirty sections*, the amount would be sufficient to secure an *actual and speedy construction* of a Pacific Railroad, on the parallel of 32 degrees. This parallel is in fact the only *practical*, and by far the best route South of 38 degrees, to which the act would confine it. The distance would be only 1,600 miles; as appears from all the surveys. The Texas Company have commenced their work, and are actively progressing.

It seems, then, that these facts ought not to be overlooked—but the grant so made, and placed in such disinterested hands, that the *double grants of Texas and the United States* may be made available to the construction of the road, on the Southern Route. The bill before Congress is a very practical one, if placed in safe hands. The *six sections* per mile, to the eight roads in Iowa and Missouri may, and doubtless will make them, in time, to complete their work to Fort Kearney. But as that route is much the most expensive, and also longer, it is obvious, that with the *double grant of Texas and from the Government*—the Texas route may be made easier and quicker. If, at the same time the road from here to Nashville and Memphis were made, and thence to Fulton on Red River, the Texas route would be the *shortest for the whole Ohio Valley*. It is not, therefore, a sectional road, but one which combines great advantages for all sections.

It is also obvious from this statement that it is urgently required of the city of Cincinnati to push the railroads to the South and South-west. Whatever may be thought by those who have not looked into these subjects, those who have know that the time has come when all the material interests of this city demand that she should have railroad com-

munications, both with the Southern Atlantic and the Gulf of Mexico. The railroad from Charleston to Knoxville will soon be completed. The road from Memphis to Nashville will soon be made. Think what we may, the Texas Pacific Road will be made. Where will be our connections with these great thoroughfares? We may *command* the whole Southern, South-western and even *Pacific trade*. But we shall never do it without setting our shoulders to the wheel. And as we can have no more corporation subscriptions it becomes the merchants, manufacturers and property men of Cincinnati to look upon and provide for these things themselves.

From the N. O. Picayune.

### A NEW SOURCE OF WEALTH FOR THE SOUTH.

Perhaps in no articles of prime necessity has there been a greater increase of demand, or a more positive falling off in the way of supply, than in oil—we allude to oil taken from what was once considered its legitimate and almost only source, the ocean. For a number of years sperm, whale and other oils have been steadily advancing in price, owing to the fact that the sources have been gradually drying up, while the consumption has been augmenting, as a matter of course, in a ratio with the increase of population and its constantly extending wants. A hasty reference to the means which have been resorted to heretofore, to obtain an increased and sufficient provision of both whale and sperm oil, will show conclusively that we cannot look farther to the ocean for a supply, anything like adequate to the demands for actual use.

Within the last ten or fifteen years the number of vessels, employed in the whaling business, has been greatly increased. As early as 1846 it was over seven hundred; but while the means have been thus augmented, there has been a gradual falling off in the quantity of oil obtained, as will be seen by the following statistics, taken from Hunt's Merchant's Magazine, a periodical worthy of all reliance:

|   |         |       |
|---|---------|-------|
| Total amount of whale oil taken in 1838 was | 226,522 | bbls. |
| " " " " " 1839 "                            | 227,753 | "     |
| " " " " " 1840 "                            | 207,908 | "     |
| " " " " " 1841 "                            | 207,348 | "     |
| " " " " " 1842 "                            | 161,041 | "     |

And again:

|   |         |       |
|---|---------|-------|
| Total amount of sperm oil taken in 1843 was | 166,985 | bbls. |
| " " " " " 1844 "                            | 137,594 | "     |
| " " " " " 1845 "                            | 157,917 | "     |
| " " " " " 1846 "                            | 95,217  | "     |

This table shows a gradual falling off, and, had we the statistics by us to continue it up to the present time, we should find a farther decrease in the produce of the ocean, notwithstanding the number of our whalers has been constantly increasing, and their brave officers and crews have pursued their prey into seas the most remote, and with a daring and hardihood equal to the efforts of the exploring expedition sent to the Arctic regions in search of Sir John Franklin and his unfortunate associates.

To show the great deficiency in supply, in proportion to the increased wants of the population, we have but to glance at past and present prices. In 1843 the price of sperm oil was *sixty-three cents* per gallon; now it is *two dollars and fifteen cents*! In 1840 whale oil was quoted at *nineteen cents* per gallon; it now brings *ninety-five cents*! Present prices are entirely too high for economical consumption, and hence the use of oil becomes a serious and burthensome tax upon manufacturers and consumers.



Even had there been no falling off in the quantity of oil procured from the whale, the increased demand is so great that nothing like a supply could be obtained. A single reference to an item of consumption will clearly establish this fact. But a few years since there was no demand for oil upon railroads; the iron horse dragging his heavy train at his heels, was not seen crossing our country in every direction. Now we have twenty odd thousand miles of railway within the Union, requiring, for each five hundred miles, a yearly consumption of one hundred thousand gallons of oil. This quantity, at a cost of one dollar per gallon, shows that our railroads already require over four millions of dollars annually to feed them with oil; and few years will elapse before double this amount will be needed, as any one may see who looks upon the different new lines of road in process of construction.

The evident necessity for vastly increased quantities of oil, and at reasonable cost, has led to investigations and experiments innumerable in order to discover some reproducing agent which would make up for the deficiency and minister to the common want. Sun flower seed was at one time looked upon as the agent; then came lard oil; and other researches into both the animal and vegetable kingdom, were made from time to time, with high-sounding proclamation of success. But still the necessities of the population were not met—still, higher and higher went up the price of oil. Nor was it until the year 1847 that any discovery was made calculated to fill up the wide gap of deficiency; at that time Lewis S. Robbins, of New York, first turned his attention towards our Southern pine forests as the great source whence a supply could be drawn, and after three or four years of continued investigation, and after many patient experiments, the important fact was brought to light that 62 per cent. of oil could be obtained from common rosin, converting, at the same time, the other products or residue of the raw material into valuable use.

At the outset, as in all new discoveries, many minor difficulties were encountered; but all have finally been successfully overcome, and we can now say that the inventor has at present eight factories for the manufacture of rosin oil in full operation in this country, and one at Liverpool, in England, and that his different establishments last year turned out over one hundred thousand barrels of oil, or a quantity greater than all the sperm oil taken from the ocean. The rosin oil, in many of its essentials, resembles the sperm, and has been proved, by many years' use to be in every way suitable for machinery, tanning purposes, wool, painting, burning in lamps, the manufacture of gas, and numberless minor uses, while its cost to the consumer is less than one-fifth that of sperm oil, and yields, even at this low price, a heavy profit to the producers. At the same time the apparatus for manufacturing the new oil is cheap and durable, as well as simple in its operation—so much so that it can be carried on entirely by common laboring hands.

Since the introduction of Whitney's cotton gin, it seems to us that no discovery has been made of equal importance to the South, and we are pleased to learn that Mr. Robbins, unlike many other great pioneers in the field of invention, is reaping a rich reward for his labors in his own life time. We have but to turn our eyes to the wide wilderness of pine forests in our Southern States, until lately

considered a worthless waste, and we find a mine of wealth rivaling in richness the gold placers of California. We have here, at our very doors as it were, a new proof of the wisdom and beneficence of Providence. Regions rich in mineral wealth are notoriously sterile; a fertile soil is adapted only to supply the animal or physical wants of man; these are facts which have long been patent to the world. And now the discovery that oil, in an inexhaustible quantity, can be made from rosin, proves that our boundless pine forests have their uses—have an important mission in the way of furnishing an article of the first necessity, and in enriching the South. From North Carolina to Texas the pine is a spontaneous production, yields readily the raw material for the manufacture of oil without destroying the tree, and in affluence which will supply the demand for all time, while the soil gives forth no other product, and is worthless for all purposes of cultivation. And as long as it bears so rich and inexhaustible a treasure upon its surface, we can well dispense with its surface for other uses.

Another thing: while the discovery of Mr. Robbins will prove a source of immense revenue, it will aid us materially in balancing the relative influence and power between the Southern and the Northern States. The apparatus for the manufacture of the rosin oil can be constructed here among us as well as in the North, a fact which should not be overlooked by those engaged in the construction of machinery, and by capitalists as well; for by securing this branch of the business to our mechanics the whole operation will be carried on independent of Northern labor or capital, leaving the entire profits at the South, where they legitimately belong.

Within the past year or two there has been a heavy demand for rosin oil for export, and this demand will increase with the extension of its manufacture. It cannot be otherwise when we look at the price of sperm oil, and the great difficulty of obtaining it. We learn that the inventor declines selling his patents in Europe, on the ground that it is more legitimate to manufacture the oil where the raw material is produced. We look upon this resolution on his part as evidently the true one, and as offering at once additional inducements for capitalists to embark in the business here on the spot.

In concluding this hasty article—we might spin it out to three times the length without exhausting the subject—we can state that a company has already been formed in our city, which, after having purchased the patents for manufacturing rosin oil in Louisiana, is soon to establish works among us. The pine woods in our vicinity furnish an abundance of the raw material, and we are sanguine that this new branch of local industry—and we cannot have too many in our vicinity—will meet with the full measure of success.

From the Nashville Patriot, May 7.

#### SOUTHERN PACIFIC RAILROAD—ITS BEARINGS UPON THE PUBLIC GOOD, &c.

Wherever a great thoroughfare is established through a country, its effects are felt upon all branches of intercommunication with which it comes in connection. Isolated sections, however, well supplied with local railroads, might still remain comparatively dormant and their roads unprofitable; but let them be united by a common channel of trade, and business assumes a new aspect, enterprise is stimulated afresh, and new life pervades

every ramification. In this point of view, how obvious is it that a great national railroad to the Pacific, opening the trade between the Eastern and Western extremes of our Republic, would arouse to unexampled activity the varied net-work of railroads now in operation, thus enhancing their own productiveness while, at the same time, unfolding the varied resources of the country, and calling into action every industrial capacity, like a great arterial trunk shooting life and vigor throughout the whole system. This would result were the road limited to our own domestic trade. But the road would be world-wide in its operation, opening to the heart of our country a direct and rapid pathway to our Western coast, and thence to the wide-extended coast of South America, the genial islands "scattered immensely wide" over the Pacific, the insular continent of Australia, teeming with gold, and all that vast and densely populated region stretching along the deeply indented coasts of Eastern and Southern Asia, China, Persia, the earth-enriching Indies, &c.

It is a well known historical fact that whatever nation, from time immemorial to the present, has obtained advantages in trade and communication with that ever-renowned source of wealth, the empires and islands washed by the Indian Ocean, has grown opulent by the traffic. Hence the ceaseless rivalry of the maritime nations of Europe in this respect. It was this that kindled the earth-compassing spirit of adventure already in the fifteenth century. It was for this the genius of Columbus dared the untried dangers of ocean, in search of a direct passage Westward to that wonderful treasure-land. But a barrier undreamt of intervened. A continent loomed up, astounding to behold and glorious, to intercept the daring flight of commerce. The grandeur of the New World eclipsed the glittering splendor of "the Indies," diverting the startled attention of mankind, attracting adventurers, traders, colonies, in a word, appropriating to itself all the elements of enterprise and genius necessary to build up and energeise the giant "Empire of the West"—until, by the due expansion of these elements, the barrier might be broken through, achieving at last the long sought "direct passage" to the East—a common highway from world to world. Is it not something remarkable that that which was undertaken by the sagacity and intrepidity of Columbus centuries ago, but with such unexpected results, should have been left for this age and country to consummate?

The opening of a direct route to the Indian Seas thus commenced by the Genoese Admiral, and so far as we are concerned, only awaiting its completion in the construction of a railroad to the Pacific, is as great a desideratum now as it ever was. The Powers of Europe are vigilant to maintain their commercial interests in that quarter of the globe. The forecast and energy of Great Britain, pre-eminent among the rest, were never more tasked than at present to secure her vantage ground there. And we have but just seen the expenditure of untold treasures, with an appalling waste of blood, in order to maintain (the "integrity of the Ottoman Empire," and thereby) the right of way through the Mediterranean Sea, secure against possible encroachment from Russian ambition. Every exertion is now making to facilitate the transit by this channel, and already the preliminary surveys have been made for the construction of a ship canal through the isthmus of Suez to the Red Sea.



But a Pacific railroad would give to the United States a decided vantage-ground in respect to this trade, being free and direct, with no formidable rivals or barbaric tribes interposed, capable of obstructing or hampering commerce; no foreign exactions to satisfy; no Bedouin hordes to levy "black mail" as a stipend for "protection;" no dreaded "Autocrat" lowering upon the path, watchful of an occasion to monopolize its benefits. It would afford us, without let or hindrance, all commercial ambition could aspire to, a world encircling thoroughfare, pouring its tide of trade into the heart of our country, to be diffused throughout every State, town and village; of all of which our Mississippi Valley would become the general receiver and dispensor. Here would flow the stream of emigration, freight and products, from both sides of the Atlantic on the one hand, and on the other, from both sides of the Pacific. And where, in respect to climate, soil or locality, could be found a site more eligible as the grand central terminus? How soon might we not expect to see all our now sparsely populated and waste domain converted into cultivated farms; our cities "enlarging their borders;" towns and villages springing up on every hand?

If a barren spot like that of ancient Palmyra could bloom on the desert, merely from being the half-way station of a caravan traffic between the Syrian coast and the waters of the Euphrates, what may not be anticipated for a scope of country, blessed by nature above all others, when become thus the converging point of travel and communication for all our continent from ocean to ocean, and for a world on either side beyond?

If, in regard to a great public enterprise, so comprehensive in its results; the intrusion of merely sectional considerations were called for, it would be easy to show how the Southern Pacific Railroad would especially promote the commercial and political interests of the South, for there is nothing better calculated to bestow upon her all the elements of prosperity and power. Apart from the development of our local resources it would serve to harmonize the interests and sympathies of the Southern and Western States, while at the same time hastening the formation of a number of new States out of our Southwestern territory, destined else to remain unproductive, unpopulated, a mere wilderness boundary. The only way of truly enlarging a country is to extend its population. If the South would "extend her area" she must appropriate by population her waste domain. We hear much talk about Kansas; subscriptions towards emigration are set on foot, State appropriations for the purpose clamored for, &c. Whether Kansas is adapted to slave labor, or would be of use to the South, I know not. But this I know, that we have here a means of unquestioned and preponderating good, conferring empire, strength, prosperity, grandeur—vast benefits from which it is hoped we will not be altogether diverted by the squabbling and hubbub about Kansas. If important to aid Kansas emigration, how much more to open the way for the occupation of that immense scope of Southern territory, which now serves no other purpose than to bar us out from the advantages of our western coast; for hereby, in this double aspect, chiefly depends our future glory.

But while conferring pre-eminent benefits on the South, the Southern Pacific road could not be prejudicial to other sections. Here are no conflicting interests. The good realized in one part must necessarily extend, in a

greater or less degree, to all the rest, promoting the mutual welfare and uniting the whole country by an indissoluble bond of union.

To none of the Southwestern States does the opening of this route offer more flattering prospects, than to Tennessee. Her geographical position and projected railroads are propitious in this respect. By the Memphis and Little Rock Road, *via* Fulton, she is put in an air line with the main channel. The Tennessee and Virginia Railroad, branching off to Richmond and Washington, will open a direct route from the East, through Knoxville, Chattanooga, and along the Southern border of the State to Memphis; while the roads from Louisville and Cincinnati, *via* Nashville, afford an equally desirable thoroughfare from the North, through Middle Tennessee. This, besides incidental advantages, could not fail to attract a large share of emigration to a State blessed by the most genial and salubrious climate, and affording in its varied and capacious resources ample scope for every industrial enterprise.

Besides, if, as her locality, manufacturing facilities, mineral wealth, and the genius of her people would seem to indicate, Tennessee is to take the lead among the Southwestern States in arts, manufactures, trade, and all those active enterprises which demand for their expansion the facilities of internal communication, it is evident that to her especially the Southern Pacific Railroad becomes an object of paramount importance, and that she would be among the first to reap its benefits.

W.

[From the National Intelligencer.]  
TOBACCO STATISTICS.

We give place in our columns this morning to an interesting and valuable report, which was yesterday transmitted to Congress, from the Statistical Office, in the State Department, in pursuance of a resolution offered by Mr. Faulkner, of Virginia, in the House of Representatives, on the 17th inst.

Not the least interesting feature in this report is the evidence it exhibits of the utility and public advantage of such a bureau as that from which it has emanated, as well as of the promptness with which such information can be supplied to Congress and the country.

The document itself contains valuable information, presented in a compendious form, and well classified arrangement.

*Statement "respecting the Tariff-duties, Restrictions, Prohibitions, and Custom House Regulations, applicable to American Tobacco in the principal Commercial Countries of Europe."*

BREMEN levies a tariff duty of  $\frac{2}{3}$  of 1 per cent.—Import duty is levied at the rate given on the invoice value, with the addition of freight and insurance charges. All foreign vessels (American excepted) must be entered at this port by a licensed ship-broker; the exemption in favor of American vessels having been conceded by the Bremen Senate in 1852.

GREAT BRITAIN levies a duty of 72c. per lb., and 5 per cent. additional.—Tobacco, snuff and cigars are prohibited to be imported into Great Britain, unless in vessels of not less than 120 tons burden, and into ports approved by the Commissioners of Customs. These ports are London, Liverpool, Bristol, Hull, Lancaster, Cowes, Falmouth, Whitehaven, Plymouth, New Castle, Southampton, Preston and Swansea, in England; Aberdeen, Leith and Greenock, in Scotland; and Dublin, Belfast, Galway, Limerick, Londonderry, Newry, Sligo, Waterford, Wexford and Drogheda, in Ireland. Duties alike from all countries and in all bottoms.

FRANCE—Tobacco a Government monopoly.—By the terms of the treaty of June 24, 1822, American produce, if imported direct to France in United States bottoms, is admitted on the payment of the same duties as apply to similar importations in other countries out of Europe in French vessels. The origin of the merchandise must, however, be duly authenticated and certified by the collector at the port of exportation, and by the French Consul. American tobacco is purchased by the Commissioners of the Regio for the Government factories, and is admitted, either in French or American vessels, free of duty. In foreign vessels the duty is \$1 86 per 100 kilogrammes (221 lbs.). The monopoly was established in 1810 by Imperial decree.

HOLLAND levies a duty of 28c. per 221 lbs.—If imported direct from the United States, admitted on same terms, whether in American or national vessels.

SPAIN—Tobacco is a Government monopoly.—Admitted at the port of Malaga, in American vessels, at a duty of 20c., and in Spanish at a duty of 15c. per lb. The privilege of the tobacco monopoly in Spain is rented to individuals, and yields a revenue of about \$4,000,000 per annum.

BELGIUM levies a duty of \$1 86 per 221 lbs.—In the direct trade between the United States and Belgium the vessels of both nations are equalized by treaty. In the indirect, or triangular trade there are discriminations, though frequently suspended by Belgium.

SARDINIA—A Government monopoly.—The annual revenue cannot be calculated, as the Italian States are grouped in official returns of commerce.

AUSTRIA—A Government monopoly.—When imported by permission of the Government the duty is \$4 85 per 110 lbs., besides 97 cents per lb. for a license to import.

SWEDEN levies a duty of 5 5-6 per lb.—The duty is over 100 per cent., and importations from the United States are diminishing annually.

NORWAY levies a duty of 4 3-4 per lb.—Owing to a difference in the weights and measures in use in Norway, the duty is about 33.3 per cent. less than in Sweden.

PORTUGAL—A Government monopoly.—The raw article for the factories of the Government is derived chiefly from Brazil—about half a million pounds per annum being received from the United States.

*Statement exhibiting the quantities of American Tobacco exported from the United States into the countries designated, with the amounts of duties paid thereon during the commercial year 1855:*

| Countries.           | Pounds.    | Duties paid.   |
|----------------------|------------|--|
| Bremen.....          | 33,058,000 | \$16,652,000.  |
| Great Britain.....   | 24,203,000 | \$18,297,468.  |
| France.....          | 40,866,000 | Av. annual revenue from monopoly, \$16,000,000.  |
| Holland.....         | 17,124,000 | \$21,695,000.  |
| Spain.....           | 7,524,000  | Av. annual revenue from monopoly, \$4,000,000.   |
| Belgium.....         | 4,010,000  | \$33,749.  |
| Sardinia.....        | 3,311,000  | No data from which to ascertain amount of revenue derived from monopoly.   |
| Austria.....         | 2,945,000  | \$129,805, besides an annual profit to the Regie of about \$7,500,000.   |
| Sweden & Norway..... | 1,713,000  | \$88,505.  |
| Portugal.....        | 336,000    | No data from which to ascertain the share of the monopoly revenue which this quantity bears; the whole amount is about \$2,250,000 annually. |

NORES.—The total receipts from custom duties in France, for one year (1848), according to official returns, were 146,000,000 francs, of which 86,000,000 were derived from tobacco, nearly all grown in the United States.

The Austrian Empire contains 36,514,397 inhabitants. The annual yield (average) of tobacco in Austria is estimated at 79,000,000 pounds. The only places where the plant is permitted to be grown are Hungary, Galicia, the Tyrol, and Venice. In Hungary it is the



leading staple, the annual crop reaching as high as 68,000,000 pounds. Of this, one-third is sold to the Austrian Regie, one-third to foreign countries, and the remaining one-third is consumed at home. The average annual importation from the United States is from two and a half to three millions of pounds. The Regie clears a profit of ten cents on each pound of raw tobacco, and the annual revenue to the Government is \$7,500,000.

In the States composing the Zollverein the annual crop of tobacco is estimated at 55,000,000 pounds. The revenue derived from American tobacco is about \$1,800,000 per annum.

Belgium produces annually about 1,300,000 pounds of tobacco, and imports from 9,000,000 to 11,000,000 pounds.

Holland produces from 4,000,000 to 5,000,000 pounds, and imports annually from 30,000,000 to 35,000,000 pounds. The tobacco factories in this country are stated to give employment to "one million operatives."

Bremen imports annually 35,000,000 to 50,000,000 pounds of tobacco, most of which is manufactured in that city and re-exported to foreign markets.

Hamburg imports only from 1,000,000 to 2,000,000 pounds annually, most of which, after being manufactured, is re-exported.

The annual tobacco crop of Russia is about 25,000,000 pounds.

The annual consumption of tobacco in Spain is about 9,000,000 pounds, one-third of which is imported for the Government factories from the United States.

In Portugal the culture of tobacco is prohibited by law.

The quantity of American unmanufactured tobacco annually imported into the principal commercial countries of Europe may be thus stated: For each inhabitant of Great Britain, 14 ounces; for each inhabitant of France, 10 ounces; for each inhabitant of Belgium, 2½ pounds; for each inhabitant of Holland, 2½ pounds; for each inhabitant of the Hanse Towns, 5 pounds; for each inhabitant of Hanover, 3½ pounds; for each inhabitant of Mecklenburg-Schwerin and Mecklenburg-Strelitz, 2 pounds; for each inhabitant of the States of Zollverein, 1 pound; for each inhabitant of Russia ½ ounce; for each inhabitant of Austria, 1 ounce; for each inhabitant of Spain, 3 ounces; and for each inhabitant of Portugal, 1½ ounces. The aggregate quantity of tobacco annually raised in these countries (exclusive of their colonies) is about 210,000,000 pounds. The aggregate quantity of tobacco raised in the United States in 1850 was 199,752,515 pounds.\*

The average annual quantity of American tobacco imported into Great Britain during a period of three years (1851-'52-'53) was 24,543,334 pounds, on which there was levied an average annual duty of \$18,554,760. The average annual quantity imported into France during the same period was 14,690,000 pounds; into Holland 18,660,000 pounds, on which the average annual amount of duty was \$24,915; into Belgium 4,824,000 pounds, on which the average annual amount of duty was \$10,600; and into the Hanse Towns 38,637,667 pounds, on which was paid an average annual amount of 12,643 91.

\*Census of 1850.

## SOUTHERN PACIFIC,

OR,

Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of HOBBS AND ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, MONDAY, MAY 26, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD, . . . . . EDITOR.

W. WRIGHTSON, }  
T. WRIGHTSON, } ASSOCIATE EDITORS.

CINCINNATI, . . . . . MONDAY, MAY 26.

#### THE COLORADO DESERT—ITS CAPACITIES FOR VEGETATION AND SUPPLY OF WATER.

The Colorado Desert is one of the obstacles encountered on the Texas route to the Pacific, and for a long time was supposed to be insuperable, on account of water. That difficulty is, however, wholly overcome, by the fact that water is found almost everywhere on the plain, by sinking wells. It also appears, that this apparently arid plain is capable of much vegetation. As the nature and character of the Colorado Desert are of interest, in many points of view, we shall make a brief digest of some of the more important facts, contained in the "PRELIMINARY GEOLOGICAL REPORT," by WILLIAM P. BLAKE, Geologist to the United States Survey Expedition, under the command of Lieutenant R. S. Williamson.

1. *Extent of the Desert.*—The Colorado Desert extends, from the base of Mount San Bernardino to the Gulf of California; bounded on the north by rocky ridges which reach from Bernardino to the sea. On the south and west it is bounded by the Sierra of the Peninsula, and on the east, by the Colorado river and the Gulf of California. It is a long, level plain, extending from the northwest to the southwest, from latitude 34° to 32°. Its greatest length is one hundred and seventy (170) miles, or from the base of the Pass to the mouth of the Gila is 140 miles. Its greatest breadth is 75 miles. Its whole area is about 6,000 square miles. Over this plain the Pacific Railroad will lie, to San Diego.

2. *Soil and Vegetation.*—Of the soil of this plain, Mr. Blake says:—"Before I reached the surface of the desert, I had been accustomed to regard it as a vast plain of gravel and sand, and supposed that the latter was so abundant and deep as to impede the progress of animals and wagons. This, I believe, corresponds with the general impression regarding the desert. Instead, however, of the whole plain being composed of loose and sandy materials, we have already seen, by the description previously given, that its basis is a compact blue clay, that, in many cases, has a smooth, floor-like surface, so hard that the passing of mules and wagons scarcely leave tracks upon it. This clay is alluvial, and forms the delta of the Colorado. It extends

northwardly from the head of the Gulf of California as far as the base of the mountain of San Bernardino." Mr. Blake continues to explain geologically, that this great plain is really the bottom of an alluvial basin, part of which was the bed of a lake, and the whole was overflowed by the waters of the Colorado.

Of the "agricultural capabilities of the soil," Mr. Blake presents a very different view from that commonly entertained. He says:

"The whole of the clay surface of the desert may be considered as capable of supporting a luxuriant growth of vegetation of almost any description, provided it is supplied with water by irrigation. The soil is alluvial, and similar to that constituting the river-bottom of the Colorado.

"The principal growth along the Colorado bottom is mezquite (acacia), cotton-wood, and willow, of which there are several varieties. The Yuma and Cocopas Indians raise good crops of corn, beans, and melons.

"The river-bottom of the Gila, consisting of a similar alluvion, is said to be well adapted to the growth of cotton; it being cultivated by the Pimo Indians, who have long been known to manufacture cotton blankets.

"On the borders of the lagoons, within the desert, there is a luxuriant growth of weeds, and the shores of New river are covered with a dense growth of grass. It is for this reason that the emigrants prefer the longer trail along the stream, to the shorter one under the sand hills, via Cook's wells and Alamo Mocho.

"The Coahuila Indians in the northwestern part of the desert raise abundant crops of corn, barley, and vegetables, in the vicinity of the springs, at their villages. I also observed in their vicinity a wide area near the mountains, where there was a dense growth of weeds, too thick to be penetrated. The ground upon which they grew was moist and miry, being supplied with water by numerous springs.

"The barley field found near the sand-hills at the base of the Bernardino Pass, was in the clay soil of the desert. The thickness and size of the stubble was such as to indicate a large yield.

"From the preceding facts it becomes evident that the alluvial soil of the desert is capable of sustaining a vigorous vegetation. The only apparent reason for its sterility is the absence of water. It is probable that there would be little difficulty in irrigating large areas of the surface. It might be accomplished by constructing canals from a point on the Colorado above the mouth of the Gila."

If, then, this plain were irrigated, instead of a barren desert, it would be one of the most fertile portions of North America; and this result we look to, as one of the certainties of the future. The Colorado, above the mouth of the Gila, being above this plain, it follows, then, a small canal would overflow it, whenever desired; and, as the supply of

water would be entirely within control, it might be made what the Delta of the Nile is. Indeed, Mr. Blake says, it is quite possible, that an overflow might be made, which would make the plain navigable from the Gulf of California to Mount San Bernardino.

As to the general supply of water for ordinary purposes, this may be obtained, in great abundance, from wells. Even now, for the necessities of traveling, there are wells made for public use, of which we give the following table (furnished by Mr. Blake), that the reader may see, that these wells are easily obtained.

3. *Water.*—The whole question of water is disposed of by Mr. Blake, in the tables and remarks following:

|                              | Dist. from the Colorado. | Intermediate distance. |
|------------------------------|--------------------------|------------------------|
| Cook's well.....             | 14.90                    | 14.90                  |
| Mezquite well.....           | 18.90                    | 4.00                   |
| Alamo well.....              | 26.90                    | 17.20                  |
| Little Lagoon.....           | 51.95                    | 15.75                  |
| Big Lagoon.....              | 62.24                    | 10.29                  |
| Sackett's well.....          | 73.24                    | 11.00                  |
| Salt creek.....              | 93.24                    | 20.00                  |
| Water at Point of Rocks..... | 118.24                   | 25.00                  |
| Coahuila springs.....        | 130.80                   | 12.60                  |
| Deep well.....               | 146.62                   | 15.82                  |
| Hot spring.....              | 157.24                   | 10.62                  |
| River in the pass.....       | 164.50                   | 7.26                   |

The following localities are not on the line of the trail:

|                   | Dist. from the Colorado. | Intermediate distance. |
|-------------------|--------------------------|------------------------|
| Indian well.....  | 70.24                    |                        |
| Soda springs..... | 87.24                    | 17.00                  |
| Salt pond.....    | 99.24                    | 12.00                  |

"The distance of the Soda springs from the mouth of the Gila in a direct line, is about sixty miles.

"It will thus be seen that there is no interval of over twenty-five miles without water, on the traveled trail across the desert. The whole distance from the Colorado to the foot of the Bernardino Pass, is not over one hundred and sixty-four miles by the trail; consequently, not more than three watering stations will be required on the desert for railroad purposes. The distance from the mouth of the Gila, in a direct line, to the water in the pass, measured without regard to the localities of water on the desert, is about 130 miles.

"There are doubtless many other localities of water that have not yet been discovered. It is, however, my opinion, that water can be obtained at almost any desired point by digging or boring."

The Colorado Desert, whose main features we have thus described, we see to be no longer a Desert. Once traversed by a railroad, and a very little capital expended in irrigation, and this so-called desert will become one of the most fertile plains of America. In fact, it is itself, a great reason why the Southern Pacific Railroad should be made. Nor is this alone. The whole Gadsden purchase is a very similar country, abounding also in silver and copper. What is to develop all that region? To cultivate and civilize it? Noth-



ing can do this till a railroad is made through it.

In conclusion, we remark, that the "Preliminary Geological Report" of Mr. Blake is one of the most valuable documents put forth by the government. It contains a great deal of information, in regard to regions of which we know little, and it is put forth in a clear, readable style. Mr. Blake is a civilian who is devoted to the natural sciences, and we hope may be employed by the government, so as to sustain and encourage him in his studies and pursuits.

For the Railroad Record.

MESSRS. EDITORS:—A number of your journal having fallen into my hands, from being much pleased with its general scope and objects, I am induced to ask the indulgence of a limited space in its columns, to bring before the public some facts in relation to proposed railroad routes and termini, in the heretofore neglected prairies of Texas.

As to the peculiar adaptability of our territory—especially on the coast of the gulf—for railroad purposes, no one who has traveled over it can for a moment doubt. Our State is rapidly filling up with a hardy and industrious population, who are developing its resources, in producing from its soil, first the means of supporting life, and then to a largely increasing extent, the staples peculiar to the South. In the want of navigable streams, they are met at the outset with obstacles of a serious nature, in transporting their products to a profitable market. A well arranged system of railroads is the only means of overcoming these obstacles.

In other States these works, if not always at first productive to the holders of their stocks, have greatly and rapidly developed their resources. Is there any reason why the same system should not be successful here? The answer would seem to be in the negative; and on the contrary it would seem that we have peculiar advantages in our favor. We have a treasury unlike that of most of our sister States—not only not minus, but actually and largely plus. A country, the finest in the world, for these peculiar works, with a large extent of surface, and a soil of unsurpassed fertility.

In view of all these facts, and if judging the signs of the times correctly, it would seem as if the dawning of our future prosperity was near at hand. Also, in view of the breaking of this auspicious day, it may be well to make a reconnoissance of our richly endowed country, to enquire where the best points are situated as termini for railroad routes, as well as to the routes themselves.

It has been a closely acted upon policy of those interested in the growth and prosperity of the city of Galveston, to keep constantly before the public the supereminent advantages which this city has, as a terminus, and

general central point of union for all the railroads which are, or may be projected for the whole State of Texas. In carrying out this policy, it is broadly asserted, that no other point on the whole coast possesses advantages to compare with this place. To examine this claim impartially is one of the objects of this communication.

What first gave the city of Galveston the start which has enabled it to go ahead, and keep its place, as the first maritime and commercial mart of the State, was the then well founded belief that it possessed the best water on its bar to be found on the whole coast of the State. There was undoubtedly, from its commencement as a city, up to the year 1854, a just claim in its favor to a superior depth of water, amounting, as an average, to nine inches, or one foot, over any and every other bay in the State, although before this period the bar at the entrance of Matagorda Bay had frequently quite as much depth of water over it. It was asserted, as early as 1834, by officers of English ships that then frequented our harbors, that this bar was a better and safer one than that of Galveston.

On the 17th and 18th of September, 1854, the coast of this State was visited by a storm of unequalled violence within the memory of the oldest resident. Its effects were generally disastrous in the extreme; but one good effect it *did* have, and this was to increase the depth of water on the bar at the entrance of Matagorda Bay, from its normal depth to eighteen inches more, upon an average, than is now possessed by any other bay on the coast, and comparing favorably with any other place on the whole coast of the Gulf of Mexico, except Pensacola, the mouth of the Mississippi, and perhaps Vera Cruz. For the truth of this assertion, the pilots at the two ports are confidently appealed to; and any one who enters these parts on the fine line of steamers so successfully operated in our waters, can without difficulty, assure themselves of the fact.

It is asserted by the Galveston papers, and those in the interest of that city, that this advantage is only a temporary one—admitting the fact, as they do in a limited degree—and that the Matagorda pass will fill up again, in time; but of this there is no evidence of even a tolerably conclusive character. It has kept open for nearly two years, and there is good reason why the difference between the former and the latter should continue to increase, in favor of the latter, than to diminish, in favor of the former.

Galveston bar is at least three miles in width, whereas Matagorda bar is hardly as many hundred yards. It would seem much more probable that a bar of three hundred yards should keep open or increase its depth—other causes being equal—than that one of three miles should do it.

So much for the entrance of Matagorda

Bay, although it might be well, in this place, to mention the central position it occupies, with regard to the whole State—a matter of no trivial importance.

Proceeding up the bay, we find several points on its west side, which have been somewhat before the public, as termini for proposed railroads. Mention will be but briefly made of them, as there seems to be no one place on this side which possesses the requisite advantages for this purpose.

First, "Saluria," situated about four miles from the bar. The only advantage peculiar to this point is a deep bayou, connecting the waters of Matagorda and Aspiro-Santo Bays. Deep excavations at the mouth of this bayou would be required, and the doubt in the mind of practical men, as to the success of such a work, taken in connection with the marshy character of the town site, has not given to this point much importance, although the bayou, after being entered, affords a good harbor, and sufficiency of water.

Proceeding up the bay eighteen miles, we come to Powder Horn bayou, where a wharf of — hundred yards has been extended into the bay.

This is the western terminus of the Harris & Morgan line of steamers, which has found great difficulty, during the past winter, in getting to the end of this wharf, with little or no freight, and but few passengers.

From its position on the west side, and opposite the extreme length of the bay, it is much exposed to all but westerly winds.—Harbor there is *none*, in the proper acceptation of the word, except for small craft, which can enter the bayou with three feet, in good tides. The site for a town is also a bad one, being a narrow strip of shell beach, with a low marsh in the rear. There is the same general objection to "Indianola" and "Savaca"—want of water; and in the case of the former place, an unhealthy and inconvenient location.

There is *one* location on Matagorda Bay which *does* possess, in an eminent degree, all the requirements as a terminus, not only to a railroad from "Austin City," but as a general center for all the roads projected, or to be projected in the State, in reality, to a far greater degree than the city of Galveston itself.

It is hardly to be supposed that this will be admitted, in the face of the powerful adverse interest now arrayed against it. "Truth is powerful, and will prevail," is an antiquated axiom, that does not always illustrate itself; especially in cases like the present, where the almighty dollar is the ruling power.

This location is well known to many people in its vicinity, and to nearly every ship-master who has visited the bay, who all admit it to be the best site for a commercial mart in Western Texas.

To endeavor to place the facts, upon which



these assumptions are based, briefly before the public, as far as this communication can do it, is the next object of the writer.

Pursuing nearly a northerly course from the bar, at eighteen miles from it we come to "Palacios," situated midway, or in the center of the bay, on a peninsula, on its northern side. A vessel coming over the bar can proceed directly to this point, with all the water she brings over with her, without obstruction to the entrance of the channel; thence in a straight course through this channel, having ten feet water at all times, and two feet or more of soft mud, to the end of a wharf—only one-fourth the length required at Powder Horn—at which latter place there is scant eight feet, and hard bottom.

When at the wharf, she is in the best harbor in Texas, protected from every wind that blows, and capacious enough to contain all the shipping ever in the bay. As a harbor for small craft it is well known as the very best in the whole bay. This harbor is formed on the south by a reef, known as "Robinson's Reef." Outside of this again, close to the reef, eleven feet of water and soft bottom is found at all times, easy of approach, and still in a good harbor, formed by "Half Moon Reef," and the position for extending wharfs to this depth a very favorable one, requiring a length no greater than the one before mentioned.

As a proof how completely this harbor is protected, it may be well to mention that the wharf standing there at the time of the destructive gale of 1854, although in a decayed state, was quite uninjured; not a plank or post washed away; while at "Salurico" and "Decrow's Point," new and expensive wharves were entirely destroyed, and at the other places named, very serious damage was done to wharves and shipping, although the gale, was not at those places of one-half the violence as at "Palacios."

The town site is the most beautiful one on the coast, with ample room for business houses and private residences, in a healthy location, and not like Galveston, liable to be destroyed at any time, by the encroachment of the waters of the gulf and bay.

The following schedule of distances for a railroad from the city of Austin, will be easily understood, by reference to a map of Texas, and can be relied upon:

Distance from Trespacios Bay to Austin—air line—125 miles. By way of Columbus, 145 miles. From Trespacios to Lagrange, 85 miles. To Gonzales, 75 miles.

An air line road from Trespacios Bay to Austin, would not cross a single stream of magnitude; would require comparatively little grading; would pass through, or near (say 25 miles) fifteen counties, containing now a population of 50,000 souls, above 10,000 square miles of the best land in Texas. The entire

cost of the road, substantially built, with complete equipments, would not exceed \$12,000 per mile. The great advantage this road would have over any other in Texas, would be that sea-going vessels drawing eleven feet and more of water, could receive and discharge their freight at its terminus, which is not the case with the Harrisburg road, or with any other proposed road, having its terminus on the Texan coast. The vexatious delays, losses and expenses necessarily attendant upon the reshipment and lighterage of goods and produce, would be wholly avoided.

It is generally understood that the Legislature, at its called session, in July next, will take the subject of railroads into serious consideration, and adopt some plan of action, by which the wishes of the people may be realized.—Whatever plan may be agreed upon, there is good reason to hope that in the selection of routes and termini, no regard will be had to the exclusive plans proposed by speculators to aid particular localities and companies; but that the best routes for the general good will be determined on, and such termini selected as are pointed out by nature, as possessing the necessary requirements in the greatest degree.

No route for a railroad from the capital seems so appropriate as one located in the valley of its own river; particularly when the lands are so rich as in the bottoms of the "Colorado," and a population to correspond; and the more especially, as a natural harbor and seaport is found at its mouth, which, as has been shown, is the best in the State.

April 30, 1856.

W. F. O.

#### GOVERNMENTAL AID IN CONNECTION WITH THE CONSTRUCTION OF THE ROAD—INDIANS ON THE ROUTE.

[CONCLUDED.]

The Assiniboin, east of the Blackfoot nation, have been steadily improving in character since the treaty of Laramie, and now sustain an excellent reputation; they previously were considered incorrigible thieves. My express to Fort Union were hospitably entertained by them, provided with a lodge, their horses, saddles, and other heavy articles placed in safe hands; but they were advised to look after their smaller things, as the little children might not be able to keep their hands off them.

I met the Assiniboin in council at a large camp about one hundred and fifteen miles east of Fort Union, and received the strongest assurances of their friendly disposition. They complained of their hunting-ground being restricted by the Red river half-breeds, against whom they asked the protection of the government; and that, in consequence, they found difficulty in getting game for their subsistence through the entire year. The Assiniboin range from the Mouse River valley to the Big Muddy river, or probably to the mouth of Milk river.

The Red river half-breeds range in the country from east of the Red river to the Mouse River valley, and going in large parties, they severely restrict the means of subsistence of the Assiniboin and the Sioux.

They are generally accompanied by small numbers of friendly Indians—Chippewas, Crees, and occasionally an Assiniboin. They were met on the large bend of the Shaienne river, that rises south of the Miniwakan lake, between the Mouse river and the ———.

A third party was also on the plains. They are a simple-minded, honest, and industrious population. They are attended by the priests and ministers of religion, and make it a principle to rest on the Sabbath. Their attention to their religious duties on these plains is one of the most striking characteristics of this primitive population. They make two hunts each year, leaving a portion of their number at home to take care of their houses and farms: once from the middle of June to the middle of August, when they make pemican, and dry meat, and prepare the skin of the buffalo for lodges and moccasins; and again from the middle of September to the middle of November, when, beside the pemican and dried meat, the skin is dried into robes.

I estimate that four months each year two thousand hunters, three thousand women and children, and eighteen hundred carts are on the plains; and estimating the load of a cart at eight hundred pounds, and allowing three hundred carts for luggage, that twelve hundred tons of meat, skins, and furs, is the product of the chase.

I had very free intercourse with the governors and prominent men of both bands, who expressed a strong attachment to the American government, and a great desire to settle permanently on American soil. I am satisfied they would make good citizens. I have collected a large amount of valuable information in reference to their history, modes of life, and with illustrations by the artist, which will appear in the elaborate report.

The Indians referred to by Mr. Gibbs, in his report, as the Upper Pend d'Oreilles, have been formed at a comparatively recent period under Ambrose as their chief, and are known as the Kalispel or Kalispelms. They consist of a number of wandering families, composed of Spokanes, Kalispelms proper, and Flatheads, who, having intermarried, have formed a habit of sojourning in the general vicinity of the Horse and Camash plains, on Clark's fork, during their annual migrations to and from the buffalo hunting grounds. They have about forty lodges, numbering some two hundred and eighty inhabitants.

The Kalispelms proper, Pend d'Oreilles, have Victor for their chief, and have sixty lodges, or about four hundred and twenty inhabitants. This estimate is lower than that of Mr. Gibbs, but may be relied on. For much valuable information in reference to these Indians, and the Catholic mission established among them, I will refer you to Doctor Snickley's report.

The Cœur d'Alene Indians are under-estimated by all the authorities. They have some seventy lodges, and number about five hundred inhabitants. They are much indebted to the good fathers for making considerable progress in agriculture. They have abandoned polygamy, have been taught the rudiments of Christianity, and are greatly improved in their morals, and in the comforts of life. It is indeed extraordinary what the fathers have done at the Cœur d'Alene mission. It is on the Cœur d'Alene river, about thirty miles from the base of the mountains, and some ——— miles above the Cœur d'Alene



lake. They have a splendid church, nearly finished, by the labor of the fathers, laymen, and Indians, a large barn, a horse-mill for flour, a small range of buildings for the accommodation of the priests and laymen, a store-room, a milk or dairy room, a cook-room and good arrangements for their pigs and cattle. They are putting up a new range of quarters, and the Indians have some twelve comfortable log-cabins. The church was designed by the superior of the mission, Pere Avili, a man of skill as an architect, and undoubtedly, judging from his well-thumbed books, of various accomplishments. Pere Gazzoli showed me his several designs for the altar, all of them characterized by good taste and harmony of proportion. The church, as a specimen of architecture, would do credit to any one, and has been faithfully sketched by our artist, Mr. Stanley. The massive timbers supporting the altar were from larch trees five feet in diameter, and were raised to their place by the Indians, with the aid simply of a pulley and rope.

They have a large cultivated field of some two hundred acres, and a prairie of from two to three thousand acres. They own a hundred pigs, eight yoke of oxen, twenty cows, and a liberal proportion of horses, mules, and young animals.

The Indians have learned to plow, sow, till the soil generally, milk cows (with both hands), and do all the duties incident to a farm. They are, some of them, expert wood-cutters; and I saw at work, getting in the harvest, some thirty or forty Indians. They are thinking of cutting out a good trail to the St. Mary's valley, over the Cœur d'Alene mountains, on the route passed over by me. They need agricultural implements and seeds.

The country, generally, on both sides of the Cœur d'Alene river and lake, is rolling and beautiful. It is interspersed with many small prairies, all affording excellent grazing, and most of them adapted to crops. The rolling country could be easily cleared, and would yield excellent wheat and vegetables. I have no question that all the country from the falls of the Cœur d'Alene to the lower end of the Pend d'Oreille lake, and from the mission for some distance above the lake, a region of three or four thousand square miles, is adapted to grazing and culture. A small portion will be overflowed by the melting of the mountain snows, and another portion will be occupied by mountain spurs or isolated peaks, capable simply of furnishing timber and fuel.

The fathers state that a better site for the mission is furnished by a river flowing from the southeast into the western end of the Cœur d'Alene lake, and called by them the St. Joseph's river. It is said to be larger than the Cœur d'Alene river, to have many prairies along its banks, and that the country generally abounds in wood, grass, and water.

The Peluse number 100 lodges and about 500 people, and are in three bands: One at the mouth of the Peluseriver, of forty lodges, under Que-lap-tip, head chief, and Stow-yalt-se, second chief; the second band, of twelve lodges, under So-je, on the north bank of Snake river, thirty miles below the mouth of the Peluse; and the third band at the mouth of Snake river, of fifty lodges, under Til-kacks.

The Flatheads number about sixty lodges, but many of them are only inhabited by old women and their daughters. The tribe has been almost exterminated by the Blackfeet,

and the mass of the nation consist of Pend d'Oreilles, Spokanes, Nez Percés, and Iroquois. I estimated their number at 350. Their country is admirably adapted to grazing; they own many cattle, which they corral at night; have at their village sixteen log-houses, and many have small patches of wheat and vegetables. Much greater advances would have been made by them in agriculture, had it not been for their entire insecurity from the incursions of the Blackfeet, and for the great diminution of their able-bodied men. Even Victor, during the last season, cached the remnant of his tribe, and a fine band of horses, reserved for the winter hunt, while the bulk of his tribe were on the Missouri plains. At a council held at Fort Owen the Flatheads pointed out to me the six or seven orphan boys whose fathers had been, within two or three years, killed by the Blackfeet.

In a general meeting of the tribe, held by Lieutenant Mullen, they expressed a strong desire that an agent should live among them, that they should be furnished with agricultural tools, and that they should be protected against the Blackfeet.

The necessity of an agent is very apparent. The agency should be established near Hell Gate. The St. Mary's valley is not simply the home of the Flatheads; it is the thoroughfare of all the Indians of Washington who hunt the buffalo on the Missouri plains.

Lieutenant Mullen's reports of November 18, 1853, December 14 1853, and January 25, 1854, are referred to for more full information. The report of Dr. Suckley will also be found to contain much valuable information in regard to these interesting Indians.

The Nez Percés were met on the plains between the Muscle Shell and Yellowstone by Lieutenant Mullen, by myself at the St. Mary's village, by myself on the Cœur d'Alene trail, and by Lieutenant Donelson on that by Clark's fork, in October, on their way to the plains of the Missouri, by Mr. Tinkham on his return from Fort Benton in November, and again by him in their own country on the Cooskooskia river in December. They are on excellent terms with the Flatheads, Cœur d'Alenes, Spokanes, Pend d'Oreilles, and the other Indians of the Territory; travel and hunt together, and are more or less intermarried with them. They undoubtedly live in a rich and inviting country.

## Opinions of the Press.

From the San Diego Herald.

### ATLANTIC AND PACIFIC RAILWAY.

On no subject of equal importance, as a railway to connect the Atlantic and Pacific oceans, does there appear to be such a dearth of information. This arises, doubtless, from the distance that separates us from our Atlantic brethren, an evil that the construction of the road or a telegraph line, alone will remedy. We, in common with editors of other public journals in California, and her scientific men, are somewhat to blame for our remissness in not giving the facts within our knowledge through the medium of our columns. Heretofore we have not done so, because we supposed that the reports of the U. S. Top. Engineers, and the report of the Secretary of War, based thereon, together with the able and minute report of Col. A. B. Gray, being before the public, was sufficient to afford ample and correct information to any one desiring to know the truth. Scarcely a

mail arrives here but brings us the opinions of editors and other gentlemen, who ought to be well informed on this subject before they venture to give their opinion to the public. From time to time we propose giving such reliable information as we may glean from our Atlantic cotemporaries and other sources, touching this grand project.

We take the following extract from the *American Railroad Journal*, of New York, of February 2.

"The question of a railroad to the Pacific will be one of paramount interest and importance till it is finally set at rest by the construction of a road, or till further examinations shall show its impracticability. In one sense a road is practicable on *any* route, for all difficulties in engineering resolve themselves into questions of *means*. A road to the Pacific may be possible, but not expedient, weighing the advantages gained with the cost of securing them.

"But at any reasonable cost we must have the road. That a practicable route can be found, we have no doubt. The great obstacle in the way of the speedy construction of the road is the fact, that no proper steps have been taken by Government to settle this question of route.

"The first step in the right direction will be to ascertain the cost of constructing and operating a road to the Pacific, compared with such standards as the Western Railroad of Massachusetts, the New York and Erie, and the Baltimore and Ohio. The only questions, then, remaining, will be the expenditure of its construction, and who shall build it.

"It is, of course, useless to speculate upon what would be the result of a properly conducted inquiry of the character named. We hazard the opinion, however, that it would show that roads upon *none* of the routes could be built for less than \$100,000 per mile."

The editor of the *Railroad Journal*, in the same article, seems to condemn mere *opinion* in opposition to *ascertained facts*, and gives as his opinion that the road will cost \$100,000 per mile on any route from the Atlantic to the Pacific. We regret this opinion of Mr. Poor, as he is looked upon as reliable authority on the subject of railroads, and in proportion to a man's character for intelligence and truth, so is his expressed opinion. But Mr. Poor is contradicted by the U. S. Topographical Engineers, and the Secretary of War; by Col. Gray and Major Emory; by Col. Howard, M. C. from Texas, and Gen. McDougall, M. C. from California, and by a host of other gentlemen of unquestioned authority, who have minutely examined the subject.

Col. Gray, in his report of the survey and estimates for the Atlantic and Pacific Railroad, gives as total cost of first class road fully equipped for 783 miles through Texas, \$19,658,366, an average cost per mile of \$25,107. Cost of second division, from El Paso to junction of Gila and Colorado, fully equipped, 578 miles, \$16,200,688; average cost per mile, \$28,028. Cost of third division, from Colorado River to San Pedro or San Diego, fully equipped, 260 miles, \$8,581,610; average cost, per mile, through California, \$33,006. The following is an extract from Col. Gray's Report:

"The following, which I have compiled from authentic sources, will show that none of the northern or north-eastern roads can be taken as a comparison to arrive at an estimate of the cost of this.

"There is a wide difference in the expense



of railroads in various sections of the country. Those of the six New England States range from an average of \$30,978, to \$52,289 per mile, and a general mean of over \$40,000 a mile. Those of New York, New Jersey and Pennsylvania, from \$31,670 to \$43,505 per mile, with a general mean of \$39,435; while Indiana, Illinois, Ohio, Mississippi and Tennessee, only average \$18,991 to \$22,622, with a general mean of \$20,692 per mile. Virginia, North and South Carolina, Georgia, and Alabama, average from \$17,971 per mile, to \$19,722, with a general mean of \$18,663 per mile. This great difference is owing to the various local and natural causes acting in favor of the southern roads. The great expense of most of the northern railroads does not arise from the original cost, nor would it be a fair guide to their cost if constructed at the present time, for many alterations and improvements have taken place in them, creating additional expense, together with other causes helping to swell the amount.

"Land damages also constitute a very large item upon the northern roads, as for instance in the State of New York, where it averages \$4,000 a mile, and which would not enter into the expense of a road through Texas, the right of way being donated by the State for 200 feet wide—and where, if the road were obliged to run through ground previously located, owners would be glad to donate roadway, for the sake of having it convenient to their lands."

The estimate of the cost of construction and full equipment, by Mr. C. H. Poole, Engineer of the San Diego and Gila Southern Atlantic and Pacific Railroad Company, nearly agrees with that of Col. Gray, being \$30,000 per mile from the Colorado to San Diego.

Many other proofs might be offered to show that the opinion of Mr. Poor is erroneous in supposing that the road will cost \$100,000 per mile, and we respectfully ask him to re-examine this *opinion* and make the necessary corrections—for he professes to be a friend of the road—and thereby save us the painful necessity of saying, "God save me from my friends—for my enemies I can look out."

#### CLEVELAND & CHATTANOOGA R. R., TENN.

The following is from a letter bearing date March 31, from Maj. Wallace, President of the East Tennessee and Georgia Railroad.

I am now engaged in building the cut-off from Cleveland to Chattanooga, 28½ miles in length, by which we shorten the distance between Lynchburg and Memphis and Nashville, 40 miles. But for a tunnel of some 900 feet I would not fear to complete it in twelve months. It is all heavy work, yet I do not intend to be the last in getting through. I start to New York this morning to procure the rails. From Chattanooga to Nashville, you are aware, the line is complete. From Chattanooga to Memphis, less than seventy miles are to finish, and much of the grading done.

The indefatigable President, Samuel Tate, will run it through this year if it is possible for man to accomplish it. His means are ample.

The remaining link to perfect this central route is the East Tennessee & Virginia Railroad, leading from this point to the junction with your road at Virginia & Tennessee line. The length is about 130 miles some 25 of

which is in use, and grading and bridging on the remainder well advanced. The progress on this work has been rather slow, yet their means have been used with great economy.

Our Legislature has aided them with great liberality; their means are now abundant, and I have great confidence in their making extra exertions to complete their road at an early day. I cannot however, give you an approximate idea of the time.

I know you are looking forward to a heavy travel when Tennessee shall have completed her part of this great line of Railroad, but let me admonish you in time that, as yet, you have hardly formed any correct estimate of the immense multitude you have to provide for daily. The whole traveling world South and West of us, even to the Gulf of Mexico and the shores of the Atlantic, will be poured in on you without intermission.

From the Houston Telegraph, April 20.

#### AID TO RAILROADS IN TEXAS.

We commend the article on "Aid to Railroads in Texas," from the San Antonio *Texan* to the attentive perusal of our readers.

We had prepared an article on the subject as an answer to the *Galveston News*, but defer it for the purpose of publishing the article in question. There are other views accumulative of the propriety of the State's adopting the loan policy, one of which we add to the article of the *Texan*, which is the advanced value the school lands, already set aside and located, will attain.

We presume that even the *News* will admit that our lands will advance in value in a proportionate degree, as railroads are pushed into the interior.

We have not the data by us as to the actual number of acres set aside, surveyed and located for school purposes; but it is a very large amount, exceeding a million of acres. At present these lands are even partially valueless, but with the advance of the railway, like the lands of Illinois, will be made of exceeding great value, which, added to the figures given by the *Texan*, will give to Texas the most splendid fund for educational purposes ever set aside by any public.

We are glad to see so much interest evinced by the press all over the State (Galveston, we believe, is the only exception), in favor of the loan policy, and trust that the ball will be kept rolling, both by the press and the people, in their primary assemblage:

"While we have always ignored any connection of the State with railroads in the way of subscribing stock, owning shares, &c., still, time, the great solver of truths and practical theorems pertaining to political and social advancement, has demonstrated beyond a doubt, that in several Southern States it is the policy of the State to lend a helping hand to railroads. In the North, and in fact in several of the Southern States, there is no necessity for such a course; for, the country being thickly settled, and commanding a large amount of capital, there is no need of such aid. In many of the Southern States, among which we may include Texas, there is great need of such, and especially when the great benefits accruing therefrom will inure to the immediate and permanent interest of the State. Our State has contributed more liberally, in the way of lands, for the furtherance of railroads, than any other State in the Union; but there is always a hesitancy on the part of the people unless they see something

tangible in the enterprise of the kind, and then they embark with energy and zeal.

"Two millions of dollars have been set aside by our State as a permanent school fund, and another million, no doubt, will soon be added, making three millions of dollars. This amount, in the nature of U. S. bonds, is now drawing five per cent interest. Now, let the State, like a private individual, consult her own interest first, and no one will pretend to deny but that will be to effect a gradual increase of a permanent school fund as her population increases. How now is this to be done in a practical and efficient manner? Let us examine into this for a moment. Let our legislature pass a law, authorizing the loan of the present school fund to railroads, after the first 25 miles have been completed, say \$8,000 to the mile, at an interest of 6 per cent., secured by a *first lien* on the road, and the principle payable in ten years. Now let us see what would be the result of such an arrangement; and first we will see what would be the result to the State. By such an operation our State would gain one per cent. more than it is now getting by interest on U. S. bonds, which, in a period of ten years would amount to \$300,000. In addition to this our State would thus secure the premium of five per cent. on said bonds, which would amount to \$150,000; and as the time approaches for our State to draw the principal, this premium will be constantly diminishing. Now, added to this premium will be the interest on \$3,000,000 for ten years—making together \$950,000. Thus we see that in the short period of ten years, without any other increase than the present premium on the \$3,000,000 U. S. bonds, together with the interest for ten years on the same, our State would thus increase its school fund to \$4,950,000. But let us now see in what other way and how much more the school fund would be increased by adopting this system. It will be remembered that our State donates sixteen alternate sections of land to every mile of railroad completed. Now the loan of the \$3,000,000 school fund to the aid of railroads, allowing \$8,000 to the mile, would complete 375 miles of road; and allowing the State to fix the minimum price of her lands so situated, say at one dollar per acre (we might safely say \$2.50), as these lands would be returned to the Land Office surveyed, and the proceeds would amount to \$3,840,200. This, added to the \$4,950,000 would make \$8,790,200, the amount of our school fund at the end of ten years, provided none of the accruing capital was invested in a similar manner; but should the capital, arising from the sale of said lands be again so invested, at the *same rate of interest and security*, we verily believe that in ten years Texas would have a larger school fund and more miles of railroad than any State in the Union, and still it would hardly supply the demand of the immense population, that would, by this very means be induced to find their homes in our State. And then again let us contemplate the results to our State for the additional lands thus brought under taxation, and the revenue also arising from the increased value of real estate.

"There can be no valid objection to loaning the school fund in the manner mentioned above, because the best security is given, viz: a first lien on the entire road for only about one-third of its inherent value, and a constantly accruing interest, in default of the payment of which the road might be sold. Besides this, no money is to be loaned to



roads until 25 miles of the same are in operation.

"The State of Tennessee, by an act of the legislature, loans to railroads \$10,000 to the mile; immediately after a *bona fide* subscription, sufficient to grade them and provide cross-ties, has been obtained, and thirty miles must be ready for the iron before the first installment is delivered. The bonds are taken at par, bearing 6 per cent. per annum as an interest, and mature in thirty years, and constitute a first mortgage on the road.

"The State of Louisiana makes it the duty of the State Treasurer to subscribe to the amount of one-fifth of the stock in all railroads, when they have special charters granting State aid. Such stock is payable in State bonds, at par, bearing 6 per cent. interest and running 40 years.

"North Carolina is aiding several railroads by subscribing stock to the amount of two-thirds of the estimated cost—in some instances by endorsement.

"The State of Texas cannot contribute her aid to railroads by a stock subscription as a difficulty would arise as to which would be the favored sections; but the loan of the school fund now held by the U. S. we believe to be feasible. The U. S. will give up this amount in a few years, and what then are we to do with it, more profitable to the State, than as mentioned above? Shall we be compelled to loan our capital to other States, to effect their public improvements, or have the rate of interest on our "School Fund" hawked in Wall-street? Let us rather take that course which will in a few years secure to our treasury an exhaustless and constantly accumulating *School Fund*, and make the rich valleys of our State the homes of millions of happy citizens."

From the Vicksburg Whig.  
**RAILROAD MEETING.**

Pursuant to notice that the Hon. T. Butler King had been invited to address them, a large and intelligent meeting of the citizens of Vicksburg was held on Thursday evening, at Apollo Hall. On motion of A. M. Paxton, Esq., Dr. M. Emmanuel was appointed President, and H. E. Barnes, Esq., Secretary. The President called the meeting to order and after briefly explaining that its object was to avail of the presence among us of that gentleman to learn from him the present prospects of the great enterprise of the day—the Pacific Railroad—introduced the Hon. T. Butler King, who, in a most interesting address, presented many new and important facts relating to this subject. After a review of the several plans and routes hitherto advocated by the friends of the project, centering finally upon the route nearest the 32 parallel of latitude—the Hon. Gentleman finished a concise and lucid resume of the various natural advantages of that line, as ascertained by observations by himself, Col. Grey and others. The facts adduced as to directness, facilities for construction, mineral and agricultural resources, &c., clearly established the position taken that the Texas Western Company now hold the most desirable location for the Pacific Railroad. The subject was then reviewed in its commercial and military importance. The Map was recurred to, the most important connections and their effects shown, and the argument that the road laid had strong claims to the attention and aid of government very ably sustained.

Treated of as an enterprise ensuring large

results to the capitalist—it was, by figures and statistics, made to promise a much more magnificent return than even that of the Illinois Central Railroad. The prospects of the Texas Western Road were minutely explained and listened to with evident interest, especially the statement of the present active operations upon the line, the purchase of 10 miles of iron, &c. &c.

Mr. King, in closing his address, thanked the audience for the courtesy extended him and called their attention to the fact, that although under different charters, the Vicksburg, Shreveport & Texas Railroad and the Texas Western Railroad were so closely allied in objects and interests as to render it advisable that measures be adopted whereby a cordial co-operation and reciprocation of benefits may be established between the two companies, assuring the citizens of the Vicksburg and Texas Railroad that the Texas Western Company, actuated by a feeling of good will and liberality, is ready at any time to enter into terms mutually advantageous to both companies. The suggestion elicited marked interest.

A. M. Paxton, Esq., offered the following resolution, which was adopted:

*Resolved*, That a committee of seven be appointed to prepare resolutions expressive of the sense of this meeting, in relation to the junction of the Vicksburg, Shreveport & Texas Railroad with the Texas Western Railroad, as a portion of the main trunk line of the great Pacific Railroad.

The following gentlemen were appointed to constitute the committee:

Messrs. A. M. Paxton, N. D. Coleman, T. A. Marshall, W. C. Smedes, W. H. McCordle, Edward Picket, Jr., and J. S. Byrne.

Col. N. D. Coleman then responded to the tender made by the Texas Road, of cordial and liberal action, tendered the Shreveport Railroad, taking the broad and comprehensive view proper to the subject and awakening much enthusiasm among his hearers. He pledged his efforts in the furtherance of an unity of purpose between the two roads, and spoke most encouragingly of the eventual success of both.

A. M. Paxton, Esq., of the Shreveport Road, was then called for, and in a few remarks, expressed his hearty concurrence in the views of the two gentlemen who had preceded him, and encouraged the hope that the day is not far distant when an undivided interest from the seaboard to the Rio Grande may be vigorously enlisted in Great National Road.

On motion, the meeting then adjourned.

M. EMMANUEL, President.

H. E. BARNES, Secretary.

#### RAILROADS AND THEIR PROGRESS.

It is truly astonishing to the close observer of things in this progressive age, to notice the progress of Railroad system within the last cycle of time 28 years as it is at this time, it has accomplished more for the means of transit, opening up avenues of trade, extending commerce, facilitating travel, cementing social relations, and lessening fatigue, than previous centuries through all past time had accomplished, 28 years ago, not a steamship plowed the Ocean, not a telegraphic wire told the news of what was at that moment transacting a thousand or any less number of miles distant, and on all this extended continent there were but three (3) miles of railroad, as was actually the fact in 1828. But during the next

seven years to 1835, these miles had multiplied to 918, a rapid stepping forward toward a thousand, which they over ran so far in the next seven years, as to show in the 1842, 3,877 miles and at the third septennial era of their increase 1849, 6,350. Thus in the first twenty-one years of its existence, at the completion of its minority, the system accomplished 6,347 miles, averaging during that minority an increase of over 300 miles annually. But what has it accomplished since? during its fourth septennial division of time, the last seven years to this year 1856. Just the completion of one Cycle of time, since we had but 3 miles in the whole Union, we now number 23,242 miles an increase of 23,239 miles within the last 28 years, and within the last septennial division of that time 16,892, an average annual increase of more than 2,413 miles, and at this moment our own State of Illinois, yet but in the infancy of her public improvements, can boast of more miles of railroad than were in the whole Union in 1840, and with her unprecedented local causes, and facilities for their construction, bids fair soon to be far ahead of any other State, in the number of her miles of Railroads calculating from the past, what wide! what boundless, what incalculable prospects open before us, in anticipation of her future prosperity. *Prairie Telegraph.*

From the Chicago Weekly Press.

#### PACIFIC RAILROAD—THE ISTHMUS ROUTE

Just now the country has a practical illustration of the importance of a railroad to the Pacific within our own territory. The state of things existing in Central America—the course of the new Nicaraguan Government in putting an end to the Transit Company's operations—the state of war between that government and Costa Rica—for the present, at least, and probably for a long time, closes up the thoroughfare through Nicaragua. The recent bloody affair at Panama, and the lawless condition of the country generally which renders the recurrence of such conduct at any moment a probable matter, has almost as effectually closed up that route. True, the Panama Railroad Company have adopted measures which will enable them to resist more successfully the lawless violence to which their passengers are exposed, and the Government of New Grenada has given assurances of a desire to restrain its people from further attempts to murder and plunder citizens of the United States who are passing through that country; but for a long while to come a feeling of distrust that these promises may not be fulfilled, will prevent thousands from making the journey between the Atlantic States and our possessions on the Pacific. Especially will it have the effect to cut down remittances of treasure from California and Oregon, and those who had contemplated returning East, bringing home with them the fruits of long years of effort in the mines, will feel obliged, for the present, to forego the promised pleasure.

It may be said that measures will certainly be adopted to secure safety to passengers by the Panama route, and that the war now raging in Central America will come to an end by and by. True, all this may come to pass, but that does not render the illustration we now have of the importance of a connection with the Pacific coast through our own territory a whit the less important. For the want of such connection the lives of a large number of American citizens have been



sacrificed, and many of those who escaped will come home maimed for life and plundered of their possessions. The important business relations also between the two sections are interrupted and will remain disturbed for a long time, all of which will of course result in heavy and wide-spread loss to individuals and society at large. Add to this the weak and unstable character of the government upon the Isthmus in Central America, and of the States of Mexico, in consequence of which a frequent repetition of the scenes we now deplore is a matter of almost absolute certainty, and we have an argument in favor of the Pacific Railroad that is perfectly irresistible. Without uninterrupted communication with the trans-montane communities on the Pacific coast, we cannot expect those sovereignties to consent to remain very long within the family of the American States. A few such affairs as that at Panama, and as the breaking up of the Nicaragua route, and we shall find the bond of Union which now unites them to us greatly weakened if not wholly destroyed.

With this state of facts before the country the duty of Congress is plain and unmistakable. At its present session definite action should be taken to secure the construction of one or more railroads to the Pacific. This can be done too without involving the Government in any expense. A liberal pre-emption law to induce settlement upon the proposed lines of road, a liberal grant of alternate sections to companies that would undertake their construction—this is all that is necessary. With such legislation we do not entertain the vestige of a doubt that within less than ten years from this time San Francisco, Astoria and Olympia would be in direct railroad communication with our Atlantic cities, and that prosperous lines of settlements would be formed along the entire length of these roads. Will leading statesmen leave off their schemes and projects and counter-projects for political preferment long enough to look after this grave interest a little?

**FIRTH'S METAL FOR BOXES.**—Mr. Thomas D. Davis, Master Mechanic of the Covington and Lexington R. R. writes us that he has for about eighteen months been using this metal for Journal boxes. A third of all the boxes used were of this metal; the balance were brass and iron. The iron were skeleton boxes, filled with Babbitt metal; but they did not work well; they cut the journals. If the white metal box breaks or wears out, it does not injure the journal; and Mr. Davis considers it the cheapest and best he has ever used.

During the last nine months they have sold 1,150 lbs. of old brass boxes, and 81 lbs of white metal boxes; the amount of the two kinds in use during that time being about equal.—*Railroad Advocate.*

A friend in San Diego writes to urge on the Pacific road from the eastern end and they at the west will meet us.

### SOUTHERN PACIFIC,

OR,

### Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING,

Feb. 14.

106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adapt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

### BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



## EVANS' IMPROVED CAR BRAKE.

We take the following description of this Brake from the *Pen and Lever*, an excellent scientific journal, published at Washington:

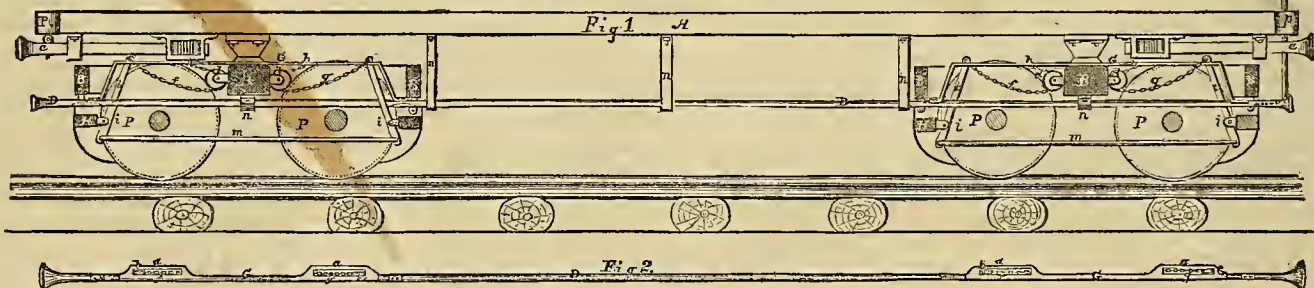
"A patent was granted on the 8th of April, to Charles S. Gale and R. M. Evans, of Laconia, New Hampshire, as assignees of R. M. Evans, for an improvement in car brakes, which promises to be of great value. Fig. 1, in the accompanying illustration, represents a longitudinal, vertical section of a car frame and trucks, provided with Evans' improved brake; and Fig. 2, a top view of the brake rod, brake levers and chains, as they are combined in the invention.

Lengthwise under each ear extends an iron brake rod, D, which is mounted in a sufficient number of hearings *n n*, secured to the bottom of the ear frame A, to hold it in place and keep it from bending. In these hearings the brake rod freely slides forward or backward. The ends of the brake rod terminate with enlarged heads; and the several brake rods of different ears are all placed in the same line, so that by bringing the adjacent heads in contact, a continuous rod will be formed the whole length of the train. The length of each brake rod is such that its ends shall reach about an inch and a

The brake rod may be situated entirely above the trucks, in which case the upper ends of the brake levers may be connected immediately with it; but when the brake rod is situated below the truck frame, as shown in the illustration, where it can be applied most conveniently, bows or side braces G, G, are firmly secured thereto, their horizontal portions being above the truck frames. In the top of each bow are two slots *a, a* (Fig. 2), through which the respective brake levers *b, c*, extend. The slots are so arranged that when the brake rod is at rest, or situated centrally under the ear, the brake levers will be at the extreme outer ends thereof, as shown in Fig. 2. Therefore any movement of the brake rod, in either direction, will move one of each pair of levers, directly and immediately. Thus one-half of the brake levers are moved in the simplest and most direct manner possible.

But it is manifestly impossible to move the other levers toward their respective fellows in the direction opposite to the motion of the brake rod, without some device to produce a reverse motion. Mr. Evans employs for that purpose the simplest and most effectual means which can be adopted. That is, he secures to the upper

## EVANS' IMPROVED CAR BRAKE.



half less forward and backward than the respective draw bars C, C, above them, extend; or so that when the ears are driven together for the ordinary purpose of pushing them along, the brake rods will not be brought in contact; but that when the motion of the train is considerable, the momentum of the ears, in checking the speed of the locomotive, will bring the rods together sufficiently to actuate the brakes; and the greater the speed of the train, and the more sudden the check of the locomotive, the more forcibly will the brakes be operated, and consequently the more effectual their action.

The brake rubbers H, I, and brake levers *b, c*, may be of any ordinary construction and arrangement; the simplest being such as is shown in the illustration, and perhaps the best. The short arms of each pair of brake levers are connected by a rod or chain *m*, so that by forcing the upper or long arms of the levers toward each other, the rubbers of each will be pressed against their respective ear wheels P, with equal force. The essential object of the invention is to connect the upper ends of these levers with the brake rod, so as to cause each pair of said levers to be thus forced toward each other by pushing the said brake rod either forward or backward; and to accomplish this in the simplest manner possible.

end of each lever a chain, which passes thence to and around a pulley *d*, attached to the truck frame, and then back to a convenient point *h*, on the brake rod. This arrangement produces the precise effect desired; for it will be seen that those levers which are moved directly by the brake rod will slacken their chains in the operation, both by their own motion and that of the brake rod; but the brake rod, or its bows G, G, will draw upon the other chains, and consequently move just so far in the opposite direction, the levers with which said chains are connected. Thus, suppose the brake rod is moved toward the right hand; the levers *b b* will be moved directly thereby, while the chains *g g* of the other levers *c c* will be drawn upon by the brake rod, and move said levers to the left. If the brake rod is moved toward the left, the levers *c c* will be moved directly thereby, and the other levers *b b* will be drawn to the right by their chains *g g*. So it makes no difference whether the train is moving in one direction or the other—the brakes are operated equally either way. This simple arrangement constitutes the whole of the invention, except that a wedge, or some equivalent and suitable device, is to be attached to the locomotive or tender, to produce a pressure against the forward end of the foremost brake rod, as the engine is checked,

so as to cause all the brake rods in the train to be moved backward when the ears are brought together by their momentum; otherwise, the brakes will not act. A train of ears provided with these brakes can be stopped in considerably less time than a train provided with hand-brakes can be stopped by a brakeman at each ear. This has been fully demonstrated by practical experiment. The result of an experiment made on the "Boston, Concord and Montreal Railroad," with a train of ears, one-half of which were provided with Evans' brake, and those imperfectly applied, was, that the engineer, by reversing the engine, when it was going at full speed, stopped it in running 216 feet; while the same train, going at the same rate of speed, was stopped by brakemen, at the hand-brakes, in running 144 feet. The men had their hands upon the brake-wheels when the signal was given. This only gave an advantage of 72 feet in favor of the hand-brakes. A series of observations also proved that 10 rails, or 180 feet, are ordinarily passed over after the signal is given before the hand-brakes are brought into action. This, added to 144 feet, would make 324 feet, as the dis-

tance required for stopping the train by the hand-brakes, making a difference of 108 feet in favor of the self-acting brake of Evans. The difference on a heavy train would be still greater, for the power of Evans' brake is in the same ratio as the momentum, while the power of the hand-brake is limited by the strength of the brakemen. A brake-wheel M, for operating the brake by hand, in the usual way, is connected with the brake-rod, so that the train can at any time be stopped in the usual manner. But, as the engineer has the train entirely under his control, only one brakeman, stationed on the hindmost ear, is needed on a long train. Thus a considerable economy may be secured in running trains provided with Evans' brake.

When new ears are originally provided with this brake, the cost scarcely exceeds that of the ordinary hand-brake. Old ears can be fitted up with the brake for a few dollars each.

Further information may be obtained by addressing Charles S. Gale, Laconia, New Hampshire."

It is stated, on the authority of recent travelers, that rich discoveries of silver have been made in New Mexico. A large emigration is already going thither.



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, TUESDAY, JUNE 3, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD, ..... EDITOR.  
W. WRIGHTSON, } ASSOCIATE EDITORS.  
T. WRIGHTSON, }  
CINCINNATI, ..... TUESDAY, JUNE 3.

### THE TEXAS LOAN BILL.

We adverted, in our last number, to the difference between the *policy* of a *State* assuming to make public works, and the policy of a partial loan, based on an actual basis of work done. The different effects of these two systems may be illustrated by a reference to the State debts, and the manner in which they were incurred.

1. Of debts incurred for *State* works. The whole debt of the States, on the 1st of January, 1855, was *two hundred and fourteen millions* of dollars. This includes the contingent, or *loan* debts. Of these debts, the objects or causes for which they were contracted, were, in round numbers, as follows:

|                                |               |
|--------------------------------|---------------|
| For State purposes.....        | \$34,000,000  |
| For Bank purposes.....         | 39,500,000    |
| For Internal Improvements..... | 151,000,000   |
| Aggregate.....                 | \$214,500,000 |

Of the \$151,000,000 expended for internal improvements, the distribution between *State* works, *State* subscriptions, and *loans*, were as follows:

|                                |               |
|--------------------------------|---------------|
| State Works.....               | \$103,000,000 |
| State Stock Subscriptions..... | 35,000,000    |
| State Loans.....               | 13,000,000    |

Now here are three different systems tried, and we have the practical results. Estimating each at their present fair market value, we have this result:

|                   | Original Cost. | Present Value. |
|-------------------|----------------|----------------|
| State Works.....  | \$103,000,000  | \$42,000,000   |
| State Stocks..... | 35,000,000     | 14,000,000     |
| State Loans.....  | 13,000,000     | 13,000,000     |

We have, then, the relative results to the States counted up thus:

|                               |              |
|-------------------------------|--------------|
| State Works lost.....         | \$61,000,000 |
| State Subscriptions lost..... | 21,000,000   |
| State Loans lost.....         | None.        |

In other words, the *State loans* are as good as when made; but the *State works* are at a discount of 66 per cent, and the *State subscriptions* at a discount of 60 per cent.

Take, for example, the States of Pennsylvania, Indiana, Ohio and Illinois, who undertook to make their own works. The cost was *seventy-five millions* of dollars; and the saleable value of their works, this day, is not *twenty millions*. Take, then, the States of Massachusetts, South Carolina, Tennessee and Maryland, which have *loaned* railroads *thirteen millions*, and the loans are now worth the money given; because the companies have invariably paid the interest, which establishes value.

If a *State* undertakes to make public works, through her agents, she acts at great disadvantage. Besides this, she assumes the *whole* cost, when in the poorest country this is totally unnecessary. If a road be worth making at all, there can always be found some private capital, on local considerations. If the *State* then *loans* a third only of the cost, it secures the construction of the road, if the road ought to be made. If, between the *State* loans and private subscriptions, one-half the actual cost of a railroad be made up, there will always be capital enough found to construct it.

If Texas is inclined to give her credit to aid railroads, it is easy enough to see that she can accomplish double as much by the *loan* as the *State system*. Texas needs immediately 2,000 miles of railroad; one-half of this East and West, and one-half running to the Gulf. If she undertakes to do it, by the *State* plan, she will swamp herself irretrievably before it is one-third accomplished. She will not finish 300 miles before her credit is exhausted. If she makes 2,000 miles herself it will cost *sixty millions of dollars*! If she *loans* \$8,000 per mile, she can do it. If she does it by the *State* she cannot do it at all. Capitalists will be alarmed before the first dollar is borrowed. The fate of Indiana, Illinois, Michigan and Arkansas, will be before every lender's eyes.

Turning to the *loans*, however, we find Massachusetts loaning \$5,000,000 to railroads, which pay every cent of the interest, and the bonds of the *State* are above par. Then turn to Tennessee, where, in the last two years, in all the stormy period of finance, all the railroads of the *State* have gone steadily forward, and the credit of the *State* stands high in market. The plan of Tennessee is perhaps the best which has been hit upon. She gives \$10,000 per mile for the *superstructure*, and a fixed sum for bridges over the large streams. The result of this is, she secures the absolute construction of every mile of railroad which she aids; and while the companies are amply assisted, they can move no farther than they can actually construct the road. Under such circumstances, whatever road is really needed will be constructed, while the *State* is entirely safe, and sure ultimately to receive all the money she expends. We think this scheme of *State* aid will bear examination; and the more it is examined, the more favorably it will be received.

The total value of the Railways of great Britain, is estimated at £300,000,000 or nearly \$1,500,000,000. The value of the soil is estimated at £1,700,000,000.

### COMMUNICATION.

We have received the following from a gentleman residing at Marshall, the eastern terminus of the Southern Pacific Railroad. As indicative of the progress of vegetation there in early May, it will be read with interest:

MARSHALL, May 6, 1856.

Eds. R. R. REC.:—*Gentlemen*: There is nothing of particular interest to communicate in reference to our road. The work along the line, for six miles east of this place, is going on very well. The grading is being done, cross-ties are being split and hewed out of the large oaks that grow on and near the line. Culverts are built of the stone found in the immediate neighborhood. These stones are of a porous character, filled with iron; they are rough, quite soft, and work easy, when taken out of the ground, but become hard and solid by exposure, look well when laid in the wall, and will make much better masonry than any brick work, and not cost half as much.

The weather is seasonable, and most delightful. We have had three most copious showers, within the last ten days, which will of themselves, if no more should fall, insure fine crops; but we have prospect for more soon, and the promise for the coming harvest is of the most favorable character. It is estimated that there will be from fifteen to twenty thousand bushels of wheat raised in this county, this season. We now have a flouring mill in Marshall, and the wheat will be ready to cut in three weeks; so that we will not be dependent on our northern neighbors for flour but a short time longer. Our tables are now supplied with peas, beans, cucumbers and new potatoes; strawberries and mulberries have been in market for two weeks; peaches will be ripe in June; they are large and very abundant, the trees already bending to the ground, under the weight of fruit. Apples will be quite plenty; the orchards are young, but very promising. Figs of many varieties are raised, and in large quantities, ripening from the middle of June to the last of November, or until the frost kills them; they afford a rare delicacy for the table, for a long season. The corn crop looks well, and a large scope of country planted. We will soon have green corn on our tables. The farmers and planters are now busy, with all their help, in their crops. As soon as they lay them by, we have assurance of plenty of hands on our road.

Yours, LACON.



## TEXAS RAILROAD AND POLICY—DIFFERENT PLANS.

Texas is a young and vigorous State. As she came in by annexation, and not in the common way, she retains all her vast landed domain, and has the means of public improvement. At present she needs railroads more than any one thing. The people need them; commerce needs them; property needs them. Accordingly, the attention of the Legislature has been called to the subject, as beyond all others important. It is the subject which agitates all classes of people there. The great question, what is the best mode of creating these railroads? For this purpose, several plans have been proposed.

1. The first action was to charter a number of railroad companies, and to give most of them a large grant of land, viz: *sixteen sections per mile*, provided the works were undertaken and finished in a given time. But no commencement could be made without capital; and in the condition of Texas credit at that time, and the ignorance which prevailed as to the value of her lands, but three roads (including the Texas Western Railroad), have been commenced. In the meanwhile the people have become impatient, and the Legislature is importuned for new, practical measures. Since the Government, by payment of the Texas Debt, has raised the credit of the State, it has now the power to give a more direct aid, and to do this two plans are proposed.

The first of these is the plan before the Legislature (which is to meet again in July), called the *Loan Bill*. This plan is precisely that which Tennessee has adopted most successfully, and which has set all her railroad companies in motion, and sustained their credit; with this difference in favor of Texas, that she loans *money*, and Tennessee loaned bonds. It is to loan the railroad companies \$8,000 per mile, and to apply it to the iron and the superstructure. In this the State aids the railroads, and gets perfect *security* in the construction of the road.

The second is called the *State plan*, and is nothing more nor less than for the State to make the railroads; a plan which, in all public works, has heretofore proved only a State loss.

On the merits of these plans, public meetings are now being held in Texas. The following are the resolutions adopted in Grimes county:

*Resolved*, That it is the paramount duty of the State, by wise and liberal legislation, to aid its citizens in prosecuting works of internal improvement.

*Resolved*, That we approve of the land bonus system already adopted by the Legislature, and that we believe the State can in no way so profitably dispose of its public domain, as to appropriate it in such a way as to promote the construction of railroads.

*Resolved*, That this meeting heartily approve of the policy of the Loan Bill, now pending

before the Legislature, and that we recommend the loaning of \$8,000 per mile, to any company that shall first construct twenty-five miles of road—the State to hold a first mortgage upon the amount of road so constructed, to secure the said loan; and that this meeting instruct our Senator and Representatives in the Legislature, to use their influence to procure the passage of said bill.

*Resolved*, That this meeting disapprove of the principle and policy of the State's undertaking, to the exclusion of its citizens, the construction of railroads, as a departure from the legitimate functions of government, and an interference with private enterprise, alike dangerous to the people, and disastrous to the public credit; that while the construction of railroads by States has, in every instance, cost more than twice their value, their management has been still more improvident and unsuccessful; and while there is not a single line of State road in the Union that is not now a tax upon the State, over and above its income, it would be folly in the people of this State to adopt a system that has been thus universally reprobated by experience elsewhere.

The meeting in Grimes county has undoubtedly expressed, in these resolutions, the true policy for the State of Texas; and it is to be hoped the Legislature and the Railroad Convention will adopt this policy, before the State rushes into irretrievable difficulties.

The *Loan Bill* is a good plan, for two very powerful reasons:

1. While it aids the railroads by a moderate loan of money, it does this no faster than the railroads are made; and the loan is therefore perfectly and absolutely secure.

2. The State credit will not be used at all, and the money has a road bed to rest on. All is accomplished by loaning so much a mile, which can be accomplished at all by the loan on the road of so much per mile, as will furnish the superstructure.

The *State plan* is a dangerous one, and not available, for the following reasons:

1. If the State of Texas is to build railroads on her broad territory, she will require a most enormous issue of bonds, and she has no such credit as will sustain them. By adding the State money and railroad credit together, as in the Loan Bill, she can husband her credit so as to sustain it at a respectable level. Otherwise not. The State of Virginia, by merely subscribing *three-fifths* the stock; has issued nearly twenty millions of bonds, and already hazarded her credit. Texas, in the *State plan*, will sink her credit at once.

2. What is to sustain bonds issued merely on the State faith? Nothing that we can see, but the public lands. But the largest part of the public lands are already pledged to the railroads; certainly to those which have commenced their work in time. If the State breaks faith with the railroad companies who have fairly commenced their work, its financial character is gone. Its credit is gone. It may break faith with anybody, for any purpose. Three companies have commenced

their work in good faith; perhaps more; and the lands pledged by public acts to them, must be preserved intact.

3. *State works* are in nearly all cases losses. Pennsylvania has offered her public works for sale, without a bidder; and the Georgia Railroad, constructed by the State, was a failure, financially.

In our opinion, sound policy requires Texas to aid the railroads and rivers by *loans*, to a moderate extent, and leave the State unembarrassed, and its credit unsoiled.

## NEW MEXICO AND CHIHUAHUA IN 1847.

We take the following interesting description of this region from the journal of Dr. Wislizenus, who accompanied Col. Doniphan's Expedition, in the years 1846 and 1847. A part of the suggestion here made, as to annexation, it will be seen, has been carried out since the date of the report, by purchase:

New Mexico and Chihuahua, which I consider here principally because they fell under my immediate observation, are neither the richest nor the poorest States of Mexico; but both of them have resources that never have been fully developed.

*Agriculture*, as we have seen, is the least promising branch of industry. The want of more water-courses, and the necessity of irrigation, are the principal causes; but nevertheless, they raise every year more than sufficient for their own consumption; and failure of crops, with starvation of the people, is less common here than in many other countries, because the regular system of irrigation itself prevents it. Besides, there are large tracts of land in the country fit for agriculture, but allowing no isolated settlements on account of the Indians. Another reason, too, why farming settlements make slow progress, is the large haciendas. That independent class of small farmers who occupy the greatest part of the land in the United States, is here but poorly represented, and the large estates cultivate generally less ground than many smaller, but independent farmers.

As a *grazing country*, both States are unsurpassed by any in the Union. Millions of stock can be raised every year, in the prairies of the high table-land, and in the mountains. Cattle, horses, mules, and sheep, increase very fast; and if more attention were paid to the improvement of the stock, the wool of the sheep alone could be made the exchange for the greatest part of the present importation. But to accomplish that, the wild Indians, who, chiefly in the last ten years, have crippled all industry in stock raising, have first to be subdued.

*Mining*, another main resource of the country, needs, to some degree, also, protection from the Indians, because valuable mines have sometimes been given up, from their incursions; and other districts, rich in minerals, cannot be even explored, for the same reason.

The silver mines of the State of Chihuahua, though worked for centuries, seem to be inexhaustible. The discovery of new mines is but a common occurrence; and attracted by them, the mining population moves generally from one place to another, without exhausting the old ones. To make the mining more effectual, onerous duties and partial restrictions ought to be abolished, and sufficient



capital to work them more thoroughly and extensively would soon flow to the State.—New Mexico seems to be as rich in gold ore as Chihuahua is in silver; but yet, less capital and greater insecurity have prevented their being worked to a large extent.

To develop all those resources which nature has bestowed upon these two States, another condition of things is wanted than at present prevails there—a just, stable, and strong government is, before all, needed, that can put down the hostile Indians, give security of person and property to all, allow free competition in all branches of industry, and will not tax the people higher than the absolute wants of the government require. Under such a government, the population, as well as the produce of the country, would increase at a rapid rate; new outlets would be opened to commerce, and the people would not only become richer and more comfortable, but more enlightened, too, and more liberal.

Is there at present any prospect of such a favorable change?

The Mexicans, since their declaration of independence, have been involved in an incessant series of local and general revolutions throughout the country, which prove that republican institutions have not taken root amongst them, and that, although they have thrown off the foreign yoke, they have not learned yet to govern themselves. It could hardly be expected, too, that a people composed of two different races, who have mixed, but not assimilated themselves, should, after an oppression of three centuries, at once be fit for a republic. Fanaticism alone may overthrow an old government, but it wants cool and clear heads to establish a new one, adapted to the people, and a certain intellect of the whole people to maintain permanently a republic. But this wide-spread intellect does not exist yet in the mass of the Mexican populace, or they would not have been duped, as they have been for twenty years past, by the long succession of egotistical leaders, whose only aim and ambition was power and plunder; and during all these disgraceful internal revolutions, neither the general nor local governments have done anything to spread more intellect among the great mass of the people; they had neither time nor money for it, and it did partly not suit their ambitious plans to govern a more enlightened people.

Where shall the enlightening of the masses and the stability of government now come from? I cannot help thinking that if Mexico, debilitated by the present war, should afterwards be left to itself, the renewal of its internal strifes will hurry it to its entire dissolution; and what the United States may refuse at present to take as the spoils of the war, will be offered to them in later years as a boon.

The fate of Mexico is sealed. Unable to govern itself, it will be governed by some other power; and if it should fall into worse hands than those of the United States, it may yet congratulate itself, because they would respect at least its nationality, and guarantee to it what it never had before, a republican government.

That the whole of Mexico would as well derive advantage from such a change, as the whole civilized world, if this wonderful country should be opened to the industry of a more vigorous race, there is no doubt in my mind; but I doubt the policy on the part of the United States to keep the whole of Mexico in their possession, even if they could, because

a heterogeneous mass of seven or eight millions of Mexicans, who have to be converted from enemies into friends, and raised from an ignorant and oppressed condition to the level of republican citizens, could not be as easily assimilated to the republic as a similar number of European immigrants, that arrive here in great intervals of time, with more knowledge, and with the fixed intention to live and die as Americans.

At the end of this war, the United States will probably be bound to indemnify themselves for the large expenses of the war, by some Mexican provinces; but the more valuable the territory, and the fewer Mexicans they acquire in this way, the more will the new acquisition be useful to the United States.—In the northern provinces of Mexico, both those conditions are united.

Let us suppose, for instance, that from the mouth of the Rio Grande a boundary line should be drawn up to Laredo, the head point of steam navigation on the Rio Grande, and in the latitude of Laredo, a line from thence west to the Gulf of California, that territory would embrace, besides the old province of Texas, a small portion of the States of Tamaulipas and Coahuila, the greatest part of the State of Chihuahua, the State of Sonora, New Mexico, and both Californias. The Mexican population of the States—if we except the highest probable estimates, and include, instead of the small slice of Tamaulipas and Coahuila, the whole population of the State of Chihuahua—is the following:

|                       |         |              |
|-----------------------|---------|--------------|
| Chihuahua.....        | 160,000 | inhabitants. |
| Sonora.....           | 130,000 | "            |
| New Mexico.....       | 70,000  | "            |
| Upper California..... | 35,000  | "            |
| Lower California..... | 5,000   | "            |
|                       | 400,000 | "            |

The whole population of these States amounts, therefore, only to about 400,000 souls, while this territory, according to the usual Mexican estimates, embraces an area of about 940,000, or, including the old province of Texas, already lost by Mexico, of about 1,200,000 English square miles.\*

The greatest part of this territory has never been occupied, or even explored by the Mexicans, and the thin population in the settled parts of it, proves that they never had put great value upon it. The greater inducements which the South of Mexico offered, on account of mines, climate, commerce, etc., have concentrated there the seven or eight millions of inhabitants that compose the Mexican nation, allowing but a small portion of them for the northern provinces. One-half of this northern territory may in fact be a desert, and entirely worthless for agriculture; but to a great commercial nation like the United States, with new States springing up on the Pacific, it will nevertheless be valuable for the new connections that it would open with the Pacific, for the great mineral resources of the country, and for its peculiar adaptation for stock-raising. Mexico itself would lose very little by the States composing this territory, as they always have been more a burden to it than a source of revenue. All the connection which heretofore has existed between Mexico and those States, was, that the general government taxed them as highly as they would submit to—which never was very great—and dragged them as far as possible into the revolutionary vortex in which the South of Mexico was constantly whirling; but

\*The territory of the whole republic of Mexico, including the old province of Texas, is variously estimated at from 1,650,000 to 1,700,000 English square miles.

it never afforded them any protection against hostile Indians; never stopped their internal strifes, or ever promoted the spread of intellect or industry—in short, it heaped, instead of blessings, all the curses of the worst kind of government upon them.

Should the United States take possession of this country, the official leeches, who consider themselves privileged to rule in those States, will, of course, make some opposition—if not openly, at least by intrigue—but the mass of the people will soon perceive that they have *gained by the change*; and if to their national feelings some due regard is paid, they will, after some years, become reconciled to their new government; and, though Mexican still, they may nevertheless become good citizens of the Republic of the North.

Policy, as well as humanity, demands, in my humble opinion, such an extension of the "area of freedom" for mankind. If deserts and mountain chains are wanted, as the best barriers between States, this line affords both these advantages, by the Bolson de Mapini in the east, and the extensive Sierra Madre in the west.

On the Gulf of California, the important harbor of Guaymas would fall above that line. What sort of communication between Guaymas and the Rio Grande might be considered the best, a closer exploration of the country must decide; but a railroad would most likely, in the course of years, connect the Rio Grande with that harbor, and give a new thoroughfare from the Atlantic to the Pacific, for commerce, as well as for emigration to California and Oregon. The distance from Laredo to Guaymas, in a straight line, is about 770 miles. The plan of such a railroad, even if the height of the Sierra Madre in the west would not allow it to be carried in a straight line to the Pacific, but from Chihuahua in a northwestern direction to the Gila, would therefore be less chimerical than the much talked of Great Western Railroad, from the Mississippi to the Columbia river; and if the above mentioned country should be attached to the United States, we may in less than ten years see such a project realized.

This boundary line would at the same time allow an easy defense; proper military stations at the Rio Grande, and near the Gulf of California, would secure the terminating points of that line; some fortifications erected in the mountain passes of the Sierra Madre, where but one main road connects the State of Chihuahua with the South of Mexico, would prevent invasions from that direction, and some smaller forts in the interior would be sufficient to check and control the wild Indians.

HON. T. BUTLER KING.—We had the pleasure of meeting this distinguished gentleman at Marshall during the past week, and of conferring with him freely upon all matters touching the interests of the great western railroad enterprises in which we are engaged. Mr. King is a gentleman of the very first order of talent, being certainly far in advance upon the interests of the country of the greater number of the distinguished men in our country. He is familiar with all the minute details of the Pacific Railroad enterprise, and understands thoroughly all the obstacles that stand in the way of the work, as well as all the influences that tend to favor it. He has been assailed most unmercifully, but time will vindicate the purity and wisdom of his course.—*Shreveport Democrat*.



## MOBILE &amp; OHIO RAILWAY.

The annual meeting of the stockholders in the above important line was held at Mobile, on the 25th, and by adjournment, on the 26th of February, when much discussion was had on the present position of the company. Several propositions were considered respecting the best method of raising the sums necessary to complete the road, and the following resolution, offered by Col. Billups, of Columbus, was finally adopted:

*Resolved*, That the stockholders present have full confidence that the mode and manner of raising the necessary means to relieve the company from its present embarrassment, and also to carry on the work of further construction and final completion of the road, may be confided to any board of directors that will be elected by the stockholders at their present annual meeting.

The meeting also adopted a resolution appointing a committee to investigate the affairs of the company, and to report forthwith. This report has been made, and having been adopted, we shall append a copy thereof. Subsequent to the annual meeting an election was held for directors, when two tickets were proposed, and the voting was quite spirited, over 13,000 shares being voted on. The contest resulted in the election of the following gentlemen: Milton Brown, of Tennessee; James Whitfield and W. W. Roby, Mississippi; Sidney Smith, David Salomon, F. B. Clark, Wm. Jones, Jr., J. J. Walker, J. Magee, N. St. John, C. Gascoigne, R. L. Feare and W. J. Ledyard, of Mobile. The first eight were on both tickets. Messrs. Wm. Jones, Jr., Newton St. John, Jacob Magee and David Salomon, are new directors, the others, members of the old Board.

## DIRECTORS' REPORT TO THE STOCKHOLDERS.

On the first day of January, 1855, the northern terminus of the road was at Shubuta Station, 96½ miles from Mobile; and at the last annual meeting of stockholders in February, 1855, the line was in operation to De Soto Station, 104 miles from Mobile. At that time, as is known to the stockholders, the funds of the company were nearly exhausted, and in the absence of any negotiation of the bonds which had formed from the beginning, the chief reliance for iron and equipment; it became evident that the work of construction must soon be wholly suspended, unless some other resource could be made available for its further prosecution. The President of the company was at that time in London, endeavoring to arrange the existing foreign indebtedness; and as advices from him rendered it improbable that any bonds could be disposed of abroad, in consequence of the complex and unsettled condition of European affairs, it devolved upon the Executive Committee to devise some method of relief from the company's financial embarrassments. A careful examination, based upon the actual transportation earnings of the previous year, and estimates of the traffic to be furnished by the country beyond, satisfied the Committee that if the road could be completed as far as Columbus, Mississippi, the earnings would pay the interest on the company's entire indebtedness, and in five years re-imburse the principal of a sum sufficient to complete it in running order to that point. These views were suggested in the report submitted at the last annual meeting of the stockholders, and met with their approval.

Acting upon the conclusions of the Committee, the Board of Directors, in March

last, authorized an issue of income bonds to the amount of one million dollars, bearing eight per cent. interest, and payable on the first day of July, 1861. For security, beyond the income of the road completed to Columbus, a deposit of a like amount of the unsold first mortgage bonds of the company was ordered to be made in bank at Mobile, in trust for the holders at maturity. The Committee were anxious that the road should be pushed through to Columbus by January, 1856, in order to secure the transportation of the present cotton crop of the Tombigbee region, and were assured by the Chief Engineer that this could be accomplished, provided the means were furnished without delay. Diligent exertion was made to secure the necessary subscription, but as by the terms, no subscription was binding until 500,000 dollars should be taken—nearly three months elapsed before that amount was made up, and the bonds could be issued.

Up to June a nominal subscription from city and country had been obtained amounting to \$706,000, and the Board felt warranted in urging forward the work, which was accordingly done. Arrangements were made that it was hoped would carry the road forward to Columbus within a reasonable approximation of the time specified, but unexpected difficulties intervening, over which they had no control, the progress of track-laying has been much slower than was anticipated. On the first day of January, 1856, the northern terminus was at Lauderdale Springs, 153 miles from Mobile; having been opened to Enterprise, June 8th, 1855; to Marion, October 29th, 1855; and to Lauderdale Springs, December 8th, 1856; making a total of 56½ miles added to the line in operation during the year, of which 33 miles of track have been laid since the 8th of June last. It continues slowly to progress, and the rails are now down (February 20th), as far as Gainesville Junction, 162½ miles from Mobile, and about 70 miles below Columbus. Should track-laying be steadily continued, it is estimated by the Chief Engineer in his report, that the road may be finished to Noxubee Line by 1st June; to Macon before 1st July; and to Columbus about the close of August next.

During the year 1855, the daily accommodation train has been continued to Citronelle; and a tri-weekly mixed train of freight and passengers, to the terminal station. It has been for some time past the wish of the Directors that the passenger train should be separated from the freight, and run up the alternate days; but the change has been delayed from time to time upon representations from the Assistant Superintendent in charge, that the motive power was inadequate to the additional service. Instructions have been recently issued, however, and preparations are making to carry out the arrangement, which will be perfected in a few days, and it is expected will considerably increase the passenger travel, and add to the revenue of the company.

The regular operations of the Transportation Department have been seriously interrupted in the past year by heavy successive freshets, in the Chickasawhogue, carrying away portions of the track below Citronelle, in consequence of which, trips were suspended in August 8 days; in September 13 days, and in November 5 days. A land slide near Waynesboro, caused by the excessive rains of December, also detained the Mississippi train 5 days; making a total of 31 days, during which transportation was entirely suspended.

Since the close of the year, another interruption has occurred from the giving way of an embankment at Dick's Creek, on the first day of January, under the weight of a passing train, by which accident several freight cars, laden with merchandise, were precipitated into the water, and a portion of their contents destroyed. This casualty was occasioned by a heavy flood in the Chickasaha, saturating the embankment, for the first time since it was built, to the height of twelve or fifteen feet, and causing it to settle and give way. The value of merchandise destroyed will not, as far as can now be ascertained, exceed \$3,500.

To place the road below Citronelle beyond danger from a recurrence of similar disasters, it will be necessary to change the location of some points between Mauvila and the latter station, and to elevate the grade at other points; all of which will cost, according to an estimate of the Chief Engineer, the sum of \$80,000.

If the present line had been constructed as now proposed, instead of the lower grade which was adopted, the cost would have been enhanced, as estimated, the sum of \$44,000, making a difference of about \$36,000, properly chargeable to depreciation of way. The heavy rains and freshets in the water courses during the present winter have severely tested the stability of the road-bed, and developed those points that may require further protection; and the necessary precautions should now be taken for their future security. The cost of repairing tracks, &c., damaged by the freshets of August and September, has been charged up with the current expenses, excepting the sum of \$2,036, carried to construction account.

The earnings of the Transportation Department for the year 1855, have been highly satisfactory, and notwithstanding the loss of a month, in consequence of the interruptions heretofore alluded to, are in excess of the estimates formed last spring, based upon the average length in operation.

The tabular statements accompanying this report will furnish the details of traffic for the year, in monthly divisions. From table No. 1, it will be seen that the whole number of passengers transported over the Mobile and Ohio Railroad for the year ending December 31st, 1855, was 32,607.

And the average distance traveled by each passenger was 48½ miles, equal to 1,573,533 persons carried one mile.

Of these passengers, 24,404 were first class, and 8,203 second class.

Compared with the previous year, we find an increase of only 1,604, while the average distance traveled by each passenger has increased from 26½ miles to 48½ miles, or nearly 90 per cent. The average length of road in operation for 1854, was 60 miles, and in 1855, about 118 miles, showing that the average mileage of each passenger has increased in nearly equal ratio with the extent of line in operation.

The gross earnings of the Transportation Department for the year ending December 31st, 1855, were, as per Table No. 4:

|                                |             |             |
|--------------------------------|-------------|-------------|
| From Passengers moving North.. | \$24,465 20 |             |
| From Passengers moving South.. | 23,619 40   |             |
| Total from Passenger 3.....    |             | \$48,084 60 |
| From Freight moving North..... | \$67,307 65 |             |
| From Freight moving South..... | 82,043 09   |             |
| Total from Freight.....        |             | 149,350 74  |
| From Mails and Express.....    |             | 2,497 62    |



|   |            |
|---|------------|
| Making Total Earnings from public traffic for 1855.....   | 199,932 96 |
| Total Earnings from public traffic for 1851.....  | 59,367 45  |
| Increased Earnings, 1855.....   | 140,565 51 |
| If to the earnings of 1855 be added freights transported for the company, consisting of rails and fastenings, lumber, &c., properly chargeable to construction account, which, at lowest regular rates, amounted to the sum of..... | 53,566 00  |
| We have the total gross earnings of 1855....  | 253,498 96 |

The total expenses of the Transportation Department for the same period, as per Table No. 5, amounted to \$90,696 72, which is equal to 45 per cent. of the earnings from public traffic; or adding the company's freight, the cost of transporting, which is included in the expenses above stated, we have the proportion of expense, a little less than 35 per cent. of the gross earnings.

For the year 1854, the ratio of expenses was 47 9-10 per cent. of the gross earnings, showing that while these earnings have increased nearly three-fold, upon an increased distance of about 98 per cent. of road, the expenses have diminished in the ratio of from 47 9-10 to 35 per cent upon the income. The difference would have been still more striking, were it not for the damage by the September freshet, which swell the expenses of that and the succeeding months, as will be seen by the table.

These results exhibited by the practical operation of the road upon the first 118 miles, for twelve months, amply vindicate the estimates of earnings made in March last, predicated upon its extension to Columbus; and, when that is accomplished, with good management, it must and will more than realize the sanguine expectations of its friends.

The small increase in the aggregate number of passengers for the year, is owing, as will appear from an examination of the table, to a diminution in the short local travel on the line between Mobile and Citronelle, the falling off at the latter station being 4,231, and at Mauvila 1,229 passengers, as compared with the preceding year.

STATEMENT A, accompanying this report, exhibits in detail the receipts and expenditures of the company, from its organization to December 31st, 1855.

An analysis of this statement will show the total amount invested in the construction of the road to December 31, 1855, as far as reported at the Mobile office, to be..... \$4,536 412 And this amount has been derived—

|   |             |
|---|-------------|
| From payments on Capital Stock, including City Tax bonds, of 1856 and 1857..... | \$2,568,555 |
| From Revenue of the road in operation, net.....                                 | 164,936     |
| From Income Bonds, State Loan, and sundries, payable.....                       | 1,402,921   |
|   | \$4,536,412 |

STATEMENT B, also appended, details the amount of indebtedness outstanding December 31st, 1854, together with payments made thereon in 1855; also, new debts created in the year 1855. Summing up this statement, gives—

|   |                |
|---|----------------|
| Amount indebtedness to December 31st, 1854, as per last annual report.....  | \$1,937,666 15 |
| Of which has been paid, in 1855.....  | 467,003 53     |
| Leaving unpaid December 31st, 1855.....   | 1,470,662 57   |
| New liabilities created during the year, unpaid.....  | 602,268 45     |
| Total Debt, December 31, 1855.....  | 2,072,931 02   |
| Being an increase of indebtedness over the previous year, of.....   | 135,264 87     |
| And, after deducting City Taxes of 1855 and 1856, pledged for the redemption of the Tax Bonds of 1856 and 1857, leaving a balance of..... | 1,644,931 02   |

Of this amount, 400,000 dollars due to the State of Alabama, has been extended for two years, by a recent act of the legislature, and

will be payable in March, 1858. The remainder, \$1,244,931 02, will mature in all the present year, the greater portion before 1st June next, and upon the next Board will devolve the duty of making provision for its further extension or liquidation.

This statement does not include the income bond issue payable July 1st, 1861, nor \$20,000 six per cent. mortgage bonds payable 1883, which have been disposed of, but embrace all other obligations of the company, excepting a purchase of rails now coming forward, and which will appear in the accounts of 1856.

This purchase is part of a contract made by the President in London, in the spring of 1855, for 20,000 tons rails to be delivered in 1856, of which 16,000 tons are payable in Tennessee bonds at par, and 4000 tons in the company's obligations at twelve months with interest. A portion of this contract has been delivered and will become payable in 1857.

|   |          |
|---|----------|
| If tracklaying is to be continued, after the present stock of iron out of bond is exhausted, it will require for duties and custom house charges, the sum of..... | \$75,000 |
| Will also be required for freights, insurance, &c., on cargoes in port and to arrive.....   | 40,000   |
| Which must be provided for during the next three months.....  |          |

|   |             |
|---|-------------|
| In the programme put forth by the Company in March last, in reference to raising means by an issue of income bonds, the amount required to pay floating indebtedness and build the road to Columbus, was stated at..... | \$1,090,000 |
| It was proposed to obtain this sum from—  |             |
| 1st. An issue of income bonds.....  | 1,000,000   |
| 2d. The net earnings of road in operation to Maco (198 miles), estimated at.....  | 150,000     |
| Making a total of.....  | 1,150,000   |

And leaving a surplus of \$60,000 for contingencies. The amount actually realized from these sources to 1st January, 1856 (to which are added installments due after 1st January, and amounts not yet collected), is as follows:

|   |         |
|---|---------|
| Income bonds—   |         |
| From installments paid to 1st January, 1856.....  | 396,025 |
| From loans Mobile banks.....  | 120,000 |
| From installments due and collected, Jan., 1856.....  | 40,000  |
| Uncollected city and country subscriptions, estimated.....  | 42,975  |
| Total from bonds.....   | 600,000 |
| From net earnings of road in operation to Marion (129 1/2 miles).....   | 85,000  |
|   | 685,000 |
| Leaving a deficiency of means of.....   | 405,000 |
| The President of the Company made temporary provision for supplying a part of this deficiency, by procuring a loan in New-York, on a deposit of income bonds of... .. | 100,000 |
| And by opening a credit with a banking house in New-York for \$150,000, of which has thus far been drawn against the sum of.....                                      | 125,000 |

Leaving the balance of \$180,000 still required to carry out the programme as originally stated.

The mission of the President to London, in the spring of 1855, resulted in obtaining an extension of the iron debts twelve months, and a further purchase of rails as heretofore stated. As the preliminary conditions to a delivery of the Tennessee bonds are now nearly complied with, as reported by the Chief Engineer, the rails now arriving at New Orleans, for use in Tennessee, can be sent forward at an early day, and these bonds will furnish the necessary means for their payment. The large indebtedness for iron, for the lower end of the road, extended over from last season, is now becoming due, the company's notes having been given, maturing from January to June, 1856, and payable in London. A verbal understanding, however, is reported by the President, to exist with the parties, to the effect that upon punctual payment of the interest semi-annually, the debt

will be continued until a more propitious season for disposing of the company's first mortgage bonds may arrive.

The continued demand for money, and the high rates of interest prevailing last year, has prevented any attempt to negotiate the company's securities since the last annual meeting of stockholders. Upon the advice of experienced financial gentlemen in New-York, and in view of the doubtful prospects of early negotiation abroad, the President recommended to the Board, in August last, the withdrawal and cancellation of the six per cent. sterling bonds heretofore authorized, and a substitution in their stead, of a like amount of seven per cent. dollar bonds, with interest and principal payable in New-York. An arrangement was also made by the President with a respectable house in New-York, by which, upon the change being effected, they will undertake negotiation for account of the company.

The Board confirmed these arrangements, and authorized the substitution proposed, since which the new bonds have been engraved, and are nearly ready to be issued. To perfect the new bonds, the present trust deed must also be cancelled and a new one given, to which the Trustees, it is understood, have consented. Some of the sterling bonds are not in possession of the company, being lodged in bank and elsewhere, as security for the State loan, iron obligations, &c.; and although some have acquiesced, and it is believed that no objection will be made to the exchange, yet to avoid any embarrassment from such cause, it may be worth the consideration of the new Board whether a portion of the present series of sterling bonds should not be retained, and the substitution of dollar seven per cents. confined to one-half or two-thirds of the aggregate six millions.

The report of the Chief Engineer furnishes in detail the progress of construction upon the several divisions of the line to 1st February, inst., which may be summed up as follows:

|   |            |
|---|------------|
| Total length of road from Mobile to Columbus, Ky..... | 473 miles. |
| Of which laid and in use February 1st, 1856.....      | 152 "      |
| Not yet open, February 20, 1856.....                  | 9 1/2 "    |
| Graded ready for track.....                           | 209 3/4 "  |
| In progress not ready.....                            | 47 1/2 "   |

From Columbus, Ky., to Cairo, 24 1/2 miles not yet graded. Of Paducah Branch, 59 miles in length, 7 miles of track are laid, 20 miles more are ready for track, and 32 miles in progress of graduation.

Comparing these figures with the last Annual Report, the total amount of progress made for the year 1855, is:

56 1/2 miles of track laid and added to road in use.

64 miles more completed ready for track on the main line, and Columbus, Mississippi and Kentucky branches; and on the Paducah Branch 4 miles graded, ready for track during the year.

Upwards of one million of dollars of solvent local subscriptions are yet due and uncollected in the States of Mississippi and Tennessee, all of which will be required as rapidly as they can be made available, to defray the expenses of local work in those States—for which they will be fully adequate.

The want of a suitable freight depot is severely felt in the operations of the Transportation Department, not only by the inconvenience which is occasioned in the regular transaction of business, but from the fact that the Company is paying considerable amounts for lost freight, which there is good reason to believe is stolen from the station, in its present ex-



posed condition. To erect a building for this purpose, a section of engine house, and furnish the machine shop at Whistler, will cost, by the Engineer's estimate.... \$30,000  
And to improve the track below Citronelle 80,000  
All of which should be expended in the present year, 1886.

Referring to the statement of indebtedness already given in this report, of which is matured and will be due this year..... \$1,244,931 02  
Add expenditures for station house and track, indispensable to safe operation of present length of road..... 110,000 00  
And for freight. &c., on iron arriving at Mobile, payable in cash..... 40,000 00  
Total..... 1,394,931 02

We have, in round numbers, the sum of 1,400,000 dollars, which will be needed, most of it within the next six months, to relieve the company from obligations already incurred, provided expenditures be at once stopped, and the work of construction in Mississippi entirely suspended.

Should tracklaying be continued, however, \$150,000 additional will be needed to take rails out of bond and lay them in track to Columbus.

To meet this large indebtedness the resources of the company are:

1st. The entire issue of first mortgage bonds..... \$6,000,000  
Less to protect an issue of \$1,000,000 income..... 1,000,000

..... 5,000,000  
2d. Income bonds undisposed of..... 400,000  
And 3d. the donated lands of the Company 1,150,000 acres.

The Chief Engineer's Report furnishes some suggestions with regard to a disposition of these lands, but as differences of opinion exist concerning the proper course of policy on this subject, no settled conclusions have yet been adopted by the Board concerning them. It will, however, soon become a matter demanding careful consideration and action.

The net earnings of the Transportation Department are not included in the estimated resources, for the reason that unless the road shall be extended to Columbus, these earnings will not much more than pay the interest, on State loan and other indebtedness. From the lands—while they constitute a valuable security and basis of credit—nothing can be realized in season to satisfy present engagements.

From the facts herein set forth, therefore, of the company's resources and liabilities, we arrive at one of these obvious and unavoidable conclusions:

1st. The mortgage bonds must be sold abroad; or, 2d, the stockholders must come forward and take them themselves in sufficient amount to pay off the liabilities; or 3d, their interests must be sacrificed by the failure of the road to meet its obligations.

It is true, it is believed by the President that further extension will be granted on the iron debt abroad, which makes up so large a proportion of the indebtedness, but this rests only upon verbal understanding, and no company can afford to borrow money or extend debts for any length of time at exorbitant rates of interest.

The work has (with exception of the debt unpaid), so far been prosecuted upon local means, a very large proportion of which has been furnished by the city of Mobile, including nearly the whole amount realized from income bonds for continuing the work since last spring. From year to year, since 1852, various efforts have been made to put the mortgage bonds in a train for negotiation, but no propitious season has been found for offering them in the financial markets. The proposed change from sterling to dollar bonds

payable in New-York, may facilitate their sale in that city, but the disappointments heretofore, should prevent too much reliance being placed upon aid from foreign sources, as a means of dependence for present indebtedness.

It would be indeed extraordinary, if a road offering such securities for its bonds as the Mobile and Ohio, could not command capital in their investment, were it not that the value of money has been so much enhanced by its withdrawal from the ordinary channels for war purposes in Europe—that older works and better known in financial circles, suffer under like depression, in the cities which decide their marketable quotations. The intrinsic merits of the company's bonds are not disputed; their abundant security is not questioned; the immense carrying power of the road when completed is foreshadowed by the rapid increase of its receipts as it progresses. Yet the bonds are not sold—all other available resources are exhausted, and the stockholders must come forward for the protection of their own interests; either by taking these bonds at a rate which will give them an equal income with other investments; or by purchasing an enlarged issue of income bonds, maturing at five to ten years, upon a more extended basis of earnings; or by adopting some other plan upon which the necessary means may be secured by home effort. The only remaining alternative is submission to all the sacrifices consequent upon discredit.

The ability of the city and country is fully equal to the absorption of two million of these bonds, the proceeds of which with a prudent financial management would release the company from the incubus now embarrassing all its efforts, and enable it to continue progress steadily to Okolona. From thence to Tennessee line a gap of 73 miles only would remain unfilled. The Tennessee bonds for superstructure will be saved by an extension of time granted by the last legislature of that State, and as reported by the Chief Engineer, the advanced stage of the road-bed, will enable the company to comply with the terms and receive the bonds the coming summer, so that the 73 miles above mentioned, would be the only link wanting to complete the chain from Mobile to the Mississippi river at Columbus, Kentucky.

Dissatisfaction and complaint having been manifested in respectable quarters concerning the management of the company as at present constituted—a Committee of Stockholders was invited by the President, in pursuance of a resolution of the Board in January last, to examine into the cause of complaint and other matters connected with the company's operations, but the gentlemen appointed declined the service. At a later period, another effort was made, and a committee was named by resolution of the Board, to look into the affairs of the company, and recommend to the stockholders such a course of action at their annual meeting, as would, in their judgment, be best adapted to promote public confidence, and insure for the road that harmony and support to which its merits as a public work, and its importance to the interests of the southwestern country entitle it. This committee, consisting of leading and influential citizens, was unwilling to undertake the labor which the resolutions implied, at a busy season of the year, when other duties engrossed their time and attention. Upon receiving their declaration, it was thought unnecessary to pursue the object further; but it would, perhaps, be useful and desirable for the stock-

holders to appoint from their number annually a standing committee of examination, to have cognizance and look into the management and general operations of the road from time to time during the year, and to report annually to the stockholders in regular meeting thereafter.

All of which is respectfully submitted.

F. B. CLARK, } Executive  
D. W. GOODMAN, } Committee.  
C. GASCOIGNE, }

### THE THIRTY-SECOND PARALLEL.

This parallel of latitude possesses some very remarkable features that deserve to be well understood by the people, owing to its being the cheapest and best line for the great Pacific Railroad, now in progress in Louisiana and Texas, with such flattering prospects of success.

The distance from Savannah to San Diego is about twenty-five hundred miles, the whole route level, the climate fine, the soil good on the greater portion of the route, producing in abundance the great staples that now exert such a controlling influence over the industry and trade of the world.

The explorations which have been made between the Mississippi river and the Pacific, show that there are three distinct belts of country lying parallel to each other.

1st. A fertile belt commencing on the Mississippi and extending West, according to the report of the Secretary of War, from five hundred to six hundred miles. We shall prove upon undoubted authority that this fertile belt is about seven hundred miles in width, on the 32d parallel.

2. A sterile belt ranging in width from two hundred to four hundred miles, and

3d. The mountain region having a breadth of from five hundred to nine hundred miles.

The Secretary in his report says, that "from the report of Capt. Pope it would appear that the belt of fertile land that lies on the west side of the Mississippi throughout its length, extends on this route (32d.), nearly to the headwaters of the Colorado of Texas, in about longitude 102 degrees, that is about three degrees further west than on the more Northern routes. The evidence adduced in support of this opinion is not, however, conclusive; and until it is rendered more complete, the fertile soil must be considered in this, as in other latitudes, to terminate about the 99th meridian."

We have great respect for the opinion of Secretary Davis, and if we had not positive evidence to establish the accuracy of Capt. Pope's report, we might be inclined to agree with him in this particular instance. But unfortunately for his doubt, we have not only the testimony of Capt. Pope, but of many other persons who have traveled over the country time and again, all of which go to prove that the country on this line as far west as the Mustang Springs, in longitude west of 102 degrees is unequalled for richness of soil and productiveness.

It will be remembered that Col. A. B. Gray, one of the Engineers appointed by the United States Government to run the Mexican boundary, commenced his exploration of the Southern route, under the auspices of the Southern Pacific Railroad Company, at Fort Chadbourne, a little west of the 100th parallel of longitude. According to Col. Gray, the country as far west as the Mustang Springs, "is believed by those who have passed over it to have no superior," that is, for pastoral



and agricultural purposes. There is plenty of timber as far west as these famous springs, running water in the greatest abundance, and in the neighborhood of Fort Chadbourn, where the experiment has been fully tried, garden vegetables of all descriptions flourish most luxuriantly. Col. Gray explored the country between Fort Chadbourn and the Mustang Springs—distance one hundred miles—in the month of January. In reference to it he says:

"Though just after a heavy norther in January, the bright buffalo and musquit grasses waving in the sunlight and glistening from every valley and hill-slope, presented the appearance of vast cultivated fields; whilst the picturesque oak groves resembling orchards, and the gardens of the settlers about Fort Chadbourn furnished indisputable evidence of productiveness and a genial climate."

But the doubt of the Secretary in reference to the extent of the fertile belt on the 32d parallel is not tenable upon strictly philosophical grounds, fully admitted by himself. The following passage, taken from his report, of the 27th of February, 1855, gives the reason for the sterile belt east of the mountains. He says:

"The position of this belt of mountain region, stretching from north to south, gives rise to a peculiarity of climate and soil. Fertility depends principally upon the degree of temperature and amount of moisture, both of which are much affected by increase of elevation; and the latter also depends on the direction of the wind. The upper or return current of the trade wind, flowing backward towards the northeast, gives a prevalence of westerly winds in the north temperate zone, which tends to spread the moisture from the Pacific over the western portion of our continent. These winds, however, ascending the western slopes of the mountain ridges, are deprived of their moisture by the diminished temperature of the increased elevation; and hence it is that the plains and valleys on the eastern side of the ridges are generally parched and barren, and that the mountain system, as a whole, presenting as it were, a screen against the moisture with which the winds from the west come laden, has for its eastern margin a sterile belt, which probably extends along the whole range, with a width varying from two hundred and fifty to three and four hundred miles."

This is well said, clear and philosophical, but it is astonishing that the Honorable Secretary did not perceive the existence of modifying causes on the 32d parallel. So striking are these modifying causes that any one familiar with the principles laid down in the above extract, and knowing the geographical and topographical features of this line, could have no difficulty, from a *prior* premises in reaching the conclusion that there was a greater extent of fertile soil on this latitude in the middle portion of the continent, than on any latitude more northern. These modifying causes are,

1st. The low elevation of the mountain ridges on this parallel.

2d. Its greater proximity to the waters of the Gulf and the Pacific.

3d. Its being in a more southern latitude. The winds from the Pacific laden with moisture, have no snow covered mountain ridges to pass over in this latitude to deprive them of their moisture.

These causes greatly modify the causes that produce sterility in the belt of country lying east of the mountains. But in reality

there are extensive tracks of fertile soil on nearly every section of this line to the Pacific. Even the Llano Estacado, extending from the Mustang Springs to the Rio Pecos, one hundred and fifteen miles, which is supposed to be the most sterile section of the whole route, is not so utterly destitute of fertility as many have imagined. Col. Gray passed through it in the winter, and found plenty of grass, wild animals in great numbers—antelope, black tailed deer, &c. In reference to the soil, he says:

"Much of the soil is good, and I question whether the grass set on fire annually by the Indians, on their return from marauding expeditions into Mexico, and which sweeps with such violence, together with northers that sometimes pass over this plain, are not to a great degree causes of the total absence of timber."

The valley of the Rio Pecos is admitted by all to be fertile, and the country between the Pecos and the Rio Grande at El Paso—one hundred and sixty-one miles is a good pasture country, with spots in the valleys and near the mountains of great fertility. The valley of the Rio Grande, called the Mesilla valley, is acknowledged by all to possess great fertility. It is now inhabited by more than twenty thousand people, who are engaged in raising corn, wheat, vegetables and fruits of every description. For miles and miles it is cultivated as a garden. Grapes, equal to those of California, grow to perfection, from which is made a wine of superior quality.

From the Rio Grande to the Pacific there is much good land on this route.

The Secretary in his last report in speaking of the surveys made subsequent to his first report, says:

"The survey has greatly improved the aspect of the former route by changing the line for nearly half the distance between the Rio Grande and the Pimas villages on the Gila river from barren ground to cultivable valleys, and entirely avoiding a *jonarda* of eighty miles, which occurs in that section, &c."

And again, the Colorado desert lying between the mouth of the Gila and the Pacific, formerly supposed to be a desert waste, is now ascertained to be the Delta of the Colorado and highly productive soil, requiring only irrigation—which is easy as it is much lower than the river—to make it equal to the Red river or Mississippi bottoms.

"Thus," says the Secretary, "there is every reason to believe 4,500 square miles of soil of great fertility, of which nearly one half is in our territory, may be brought into cultivation in one unbroken track along the route."

West of the coast range the country is known to be good. It forms the fertile belt along the Pacific slopes which has been ascertained to yield the cereal grains in such abundance and perfection.

Thus we have briefly sketched the main features of the soil on the 32d parallel, we may have something more to say upon the subject hereafter.

#### M. S. & N. I. R. R.

The earnings of the Michigan Southern Railroad for April were:

|                                       |              |
|---------------------------------------|--------------|
| Passengers.....                       | \$193,257 69 |
| Freight.....                          | 93,355 41    |
| Mails, Miscellaneous and Express..... | 12,096 69    |
| Total.....                            | 298,710 69   |
| Same month, 1855.....                 | 246,127 15   |
| Increase.....                         | 52,583 54    |

#### CLEARING-HOUSE SYSTEM OF ENGLISH RAILWAYS.

To render clearly intelligible the operations effected by the railway Clearing-House, which has been established upon principles analogous to those of the bankers, it will be necessary, first, to explain the reciprocal interchange of business which takes place, creating systems of mutual credits and debits between company and company.

The number of companies who have combined their operations in this manner is at present (Nov., 1849) forty-five, comprising all those whose railways lie north of a line passing from Bristol through London to Norwich, in fact, all the railways of the kingdom, except the Great Western, the Southwestern, the London, Brighton, and South Coast, the Southeastern, and their branches, and collateral lines.

These railways possess 887 stations, at any one of which traffic may be booked for any other; the consequence of which is, that there are nearly four hundred thousand different pairs of places within the circle of operations of the united companies between which traffic may be transmitted. In passing from any one such station to any other, the traffic may pass over part of any or all of the lines of the combined companies with as much continuity of progress as if the whole system were under the government of a single company.

The service of the transport, whether of passengers or goods, consists, first, in the service of embarkation, which includes all the formalities observed at the station of departure, consisting of booking, weighing, loading, packing, &c.; secondly, of the transport, properly so called, which is represented by a mileage; and thirdly, of the formalities and services of the stations of arrival, where the traffic is unloaded, discharged, and delivered, and frequently sent to the domicile of the party to whom it is addressed.

A certain rate of charge, according to the nature of the traffic, being agreed upon for each of these parts of the service of transport, the sum receivable for each object of transport must be divided among the companies over whose lines it passes, including those at whose stations the traffic is received and delivered. But the sum payable for such transport is received either by the company at whose station the traffic is booked, or by the company at whose station it is delivered, or partly by one and partly by the other. Two companies must be, therefore, debited with the sums they thus receive, and they, as well as other companies intermediate between them, over whose lines the traffic may have passed, must be credited in the stipulated proportion according to the mileage.

The first object to be attended to by the railway Clearing-House is to adjust these complicated debits and credits, as well for passengers as for every species of goods, with simplicity, clearness and dispatch, and in such a manner as not to give rise to subsequent disputes.

But besides the interchange of credits for traffic, a most complicated account arises out of the circumstance already explained, for the use of the rolling stock. The wagons of each of the numerous companies which enter into the union of the Clearing-House are driven indifferently over the lines of all the others, carrying traffic for various companies, and sometimes transporting a load no part of which is to be credited to the company owning the vehicle in which it is borne.



By mutual agreement, a certain fixed rate is charged for the use of each class of vehicle, and every company over whose lines the vehicles of other companies pass, being in the first instance credited for the traffic carried by these vehicles, is debited for the use of the vehicles themselves in which such traffic is carried. A mileage account must, therefore, be kept of all the rolling stock of all the combined companies, so that the course of each vehicle may be traced from day to day and from hour to hour, so that its mileage may be debited to such companies as may have shared its use; and in case of undue delay at the stations of any company a demurrage may be charged according to a stipulated condition, proportional to such delay.

To adjust in a satisfactory and equitable manner these accounts for the mutual use of the rolling stock, is the second function of the Clearing-House.

When the claims of one company upon another, arising out of these transactions, are not liquidated within a stipulated time, they are subject to interest at a rate agreed upon. An interest account must, therefore, be kept between company and company.

Luggage, parcels, and other objects of traffic being liable to be lost or unduly delayed, claims and complaints arise between company and company. The settlement of such claims enters into the class of operations to be transacted by the Clearing-House.

Such are the principal functions which the institution of the Clearing-House is called on to discharge.

Let us now consider the manner in which these operations are effected,

The Central Clearing-House is established in London, in a building situate near the eastern station of the Northwestern Railway. It is placed under the direction of a body of managers elected by the companies in which each company is represented.

This Central Office has agents at all the stations comprised within the circle of the united companies. In adjusting the mutual debits and credits of the companies, no company is regarded either as the debtor or creditor of any other, but the Clearing-House is the common creditor and the common debtor of all.

Dr. Lardner proceeds to explain in detail successively the mode in which each class of claim is arranged, namely, "the goods, traffic and live stock," "the passenger traffic and the carrying stock," which in reading we omit for want of time, and in conclusion he adds:

The principle which has been brought into successful operation in the Clearing-House admits of still more extensive application, which doubtless it will receive.

The practical effect of the arrangement, even so far as it is hitherto developed, is to facilitate such an interchange of the use of the rolling stock, and the service of the stations between company and company, as to render their benefits in a great degree common to all. Each company, by this expedient, maintains a stock not only for its own traffic, but to some extent for the traffic of other companies, and in exchange receives the benefit of the stock and the stations of other companies.

The perfection to which this system tends would be, that a common rolling stock should be kept for all the companies, in the support of which they should, as it were, club, each contributing a share to its maintenance, in

proportion to the quantity of traffic transported by it.

At present the interchange is limited to the vehicles of transport, the engines of each company being confined in their movements to the lines of the company to which they belong, but there is nothing which should prevent, under proper arrangements, the same interchange of locomotive power as now takes place with so much advantage in the carrying stock.

In fine, the Clearing-House may ultimately grow into an establishment for the maintenance of a general locomotive and carrying stock for the use of all the railways, to be supported by the railways in common, and charged to them in the proportion in which they use it.

So far as regards the management of the traffic, there is nothing which should limit the operation of the Clearing-House to the railways of the United Kingdom.

By proper arrangements, the same reciprocal conveniences now obtained by the railway companies in reference to the traffic booked through, as it is technically called, might be extended to the entire continent of Europe, so that passengers or goods might be booked at any station on any English railway, for any station on any continental railway. The fare might be received on booking, either wholly or partially, and might be distributed between the various lines over which the traffic should pass, in the same manner as it at present is among the railways which are united under the clearing system.

#### A RAILROAD TO THE PACIFIC.

Much has already been said in regard to the construction of a railroad extending from the Atlantic States to the Pacific ocean. In one point all are agreed, and that is in the great advantages to this country which such a work would afford. But the apprehended difficulties to be encountered in the accomplishment of the enterprise, have caused many to look upon it as impracticable, if not impossible. And the expense, together with the great obstacles to be encountered in it, are unquestionably discouraging. Yet if we consider the unbounded resources of this country, the knowledge and skill of our scientific men, and, at the same time recollect some of the many great public works requiring so much of skill and enterprise as they have done in their construction, which have already been prosecuted to a successful completion, there would seem to be no room to doubt for a moment the ability of the nation to build such a railroad through the central part of our territory, from ocean to ocean. That is what we need, all admit.

It is but a few years since a railroad across the Alleghanies was deemed as impracticable an undertaking as the Pacific railroad is now; and except the difference in length, it really was so. No space on the line of the Pacific railroad, of the same extent, we believe, would require greater expense, or present more apparently insuperable obstacles, than did the construction of the railroad from Chambersburg to Pittsburg, in Pennsylvania. The difference, then, between this and the proposed enterprise, consists mainly in a mere difference in length, and consequently increased expense. And yet the former has been successfully undertaken and accomplished. If, then, a greater expense or a greater length of time only makes the additional obstacle, there remains no question as to the

practicability of that enterprise, in the hands of the people of this country. So, too, the uniting of the waters of Lake Erie with the Hudson River, by means of a canal several hundred miles in length, cutting a water communication through a country often mountainous and rocky in a high degree, and deemed wholly impassable to such a work; was once thought to be so visionary and utopian as to subject the man (who has since immortalized his name by first proposing it) to derision. Yet that great work, too was successfully terminated, and in the great advantages to the State through which it passes, and to the whole country, which have resulted from it, all the anticipations of its originator have been more than realized.

The apprehended difficulties of constructing a Pacific road has also caused some to look to the completion of a communication between our Atlantic and Pacific possessions, across the Isthmus. This has its obstacles, too; not the least of which is, that we are not in possession of that territory. And were we, still a passage would by no means obviate the necessity of one through the heart of this country. Nor indeed, is it probable that the one would at all interfere with the other. Still less is it to be inferred that an Isthmus transit or highway, however advantageous it might be, could answer the purposes or even serve as a substitute, for a central Pacific road, which would closely unite the remote extremities of our wide spread territory, by traversing its central portions.—*Delaware State Reporter. May. 13th*

**RAILROAD TO THE PACIFIC**—We wish we could see a general movement throughout the country on the subject of this great work. There is scarcely an individual who is not anxious to see it pushed forward. It is a work in which all are interested, and it is difficult to conceive why it is that Congress does not act upon the matter. Grants of land have been made during the present session to Alabama, Florida, Iowa, &c., to aid in the construction of railroads; but the Pacific Railroad bill has not yet been reported in the House!—Some two months time were spent in quibbling over the election of a Speaker. It was held to be a matter of some importance that the presiding officer of that body should be imbued with certain political sentiments, and therefore sixty days of the session could be frittered away. After making the grand discovery that Mr. Banks was a freesoil mound, right on the question of the potato rot, and "sich like" important internal and external improvements, the question was happily adjusted, and the country permitted to breathe free again. Nearly four months have elapsed since the settlement of that "vexed question," but we do not observe any desire on the part of members to carry out the known wishes of the people, in taking measures for the construction of the Pacific railroad. We hope the present session may not be permitted to close without some definite action on this important National project.—*Daily Metropolis.*

#### SOUTHERN PACIFIC,

OR,

**Texas Western Railroad Co. Agency.**  
THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JUNE 10, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD..... EDITOR.  
W. WRIGHTSON, } ASSOCIATE EDITORS.  
T. WRIGHTSON, }

CINCINNATI, ----- TUESDAY, JUNE 10.

#### THE PACIFIC RAILROAD—PUBLIC SENTIMENT.—TEXAS WESTERN ROAD

It is not our purpose to meddle, in the slightest degree, with the political questions of the day. It is proper, however, to refer to undoubted facts in connection with the public sentiment of the nation. At the close of the general Democratic Convention, held in Cincinnati, a resolution was passed in favor of the Pacific Railroad. The *manner* in which this was passed shows more strongly the current of public sentiment than does the resolution itself. In the previous stages of the Convention this resolution had been rejected, under circumstances showing the strongest opposition in some of the old States. But before the adjournment it was very evident that the entire West demanded the Pacific Railroad, and the resolution was passed. This, although a party movement, corresponds with the undoubted sentiment of the country. The people are unwilling to have the safety of transit between the Atlantic and the Pacific endangered by such outrages as have recently occurred at Panama and in Nicaragua. They are unwilling to risk the danger of losing the Pacific States, or the equal danger of losing the commerce with Asia. A Pacific Railroad must be made, and the only question is, how?

Congress has already made large grants of land to Iowa, Missouri and Wisconsin, with the declared purpose of enabling the railroads of those States tending West to concentrate at some point on the Platte river, and thence, it is, as we understand, the intention to make one trunk (so far as government land grants will enable it to be done), from the Platte river to San Francisco. With this grant, it is proposed to unite another to construct the road on the Texas route from El Paso to San Diego. It is plain enough, that for many reasons one railroad must be made on the route of the 32d parallel, whatever other routes may be provided for. To do this, there must be such a land grant as we have here described, and there must be much more. Although Texas has made a most liberal grant of lands to the Texas Western Road, yet it is obvious that Texas should no more be left to make that 780 miles by her own company alone, than that California should be. To

supply this deficiency, the government should make a grant for mails and the transportation of troops, which grant should be payable in advance, on the completion of each section, in the same manner as the land grants. In this way the Texas Company will be able to complete their road to El Paso quite as soon as any other company can make the continuation from El Paso to San Diego. In this way the government, without directly making the road, or directly granting money, will be able to furnish such aid that private companies will be able to construct the entire road from the Mississippi to the Pacific. In no other way can it be made. We may as well face the music and admit, at once, what we all know, that the Pacific Railroad cannot be made without government assistance in some form.

In opposition to this or any other grant, to companies, there exists a jealousy that these companies will make a *speculation*. Well what if they do? Does any man contract to build a house or a ship, or a canal, or do any great job, without the expectation of a large profit? Did the government grant lands to the *Illinois Central*, to the *Mobile & Ohio*, the *Hannibal & St. Josephs*, the *Cairo & Fulton* Railroads, and divers others, without, expecting that these companies would eventually derive a profit on them? And what profit ought a company of men associated together and contributing a large amount of capital, and risking great dangers, on a road 2000 miles in extent, and \$100,000,000 cost? If it were actually made, the country would be quite willing to let such a company enjoy a profit of twenty millions, or about the per cent. of a dry goods store.

The great question is, *how* to get such a road made on any terms. Some such plan as the one we have referred to will construct the road, and if such a measure pass Congress, the only rivalry which will exist between routes, will be *which will be made first*. Then it is to be seen, by actual results, which requires the most capital, which can be easiest constructed, and which can be easiest run. Upon all these points we have no doubts, and have not hesitated to express an opinion. But let these opinions be submitted to an actual test after the grants are made; let capitalists be called together, and judge in what way they can most safely and profitably proceed. This will be the true rivalry. It will be profitable to the country, and insure, on the best practical route, a speedy construction of the Great American Central Highway.

[From the Tyler Register, April 20, 1856.]

OFFICE TEXAS WESTERN R. R. Co.,  
City of Marshall, Ap. 22, '56.

MR. EDITOR—Sir: Supposing that it might be a matter of some interest to you and your readers, to know something of the proceedings of the Board of Directors of this road, that convened here on the 14th inst., I have undertaken to give you a sort of synopsis of the proceedings, and a few ideas as to the future prospects of the company, in pushing the work forward.

On Monday, the 14th inst., the Board met at their office, in this city, pursuant to adjournment at the city of New York, on the 12th day of September last. Members present—Ex-Gov. F. M. Dimond, President; T. Butler King, Vice President; Col. C. S. Todd, of Kentucky; Gen. T. J. Green, Joshua Starr, Jonathan Adams, Wm. T. Scott, W. R. D. Ward, and L. T. Wigfall and B. F. Young, by proxy. The Board proceeded to business, in the course of which the resignation of Col. Yancey, of North Carolina, as one of the Directors, was presented and accepted, where, upon Col. R. P. Archer, of Mississippi, was unanimously elected to fill the vacancy. Col. Archer was invited to take his seat with the Board. In view of the fact that a large number of pamphlets will immediately be published here, containing in detail the whole of the proceedings, reports, &c., of the company, from its first organization, in Montgomery, Alabama, down to the adjournment of this Board, at this meeting, and sent to every stockholder and friends of the enterprise generally, I will only give you, in this communication, a succinct view of the most important measures adopted. Early in the meeting a resolution was passed to appoint a committee of five, to consist of three stockholders and two Directors, to whom was submitted the books of the company, containing the action of the Directors and Executive Committee, from the organization in Montgomery to the present time. Also, an abstract of the stock books, containing the amount sold, or disposed of, and to whom, in any way, and the amount realized by the company, by sales or otherwise. In their report, the committee show that there has been realized on stock sold, ranging from one and two to four and a half per cent., the sum of \$238,915, and on stock sold at 5 per cent., there has been realized \$125,110; making an aggregate of \$364,725. They show also that there is in the hands of Agents, not reported on by them, 16,850 shares of stock, ranging from one and one-tenth to four and a half per cent.; and 11,680 shares of five per cent. stock reported on. The committee wind up their report by expressing their entire satisfaction with the proceedings of the Board and the Executive Committee; expressing also the belief that the stock of the company was rapidly coming into demand, and that the affairs of the company were in a prosperous condition. The report was signed by Dr. Jonathan Adams, Col. W. T. Scott, Col. M. J. Hall, Joseph Mason, and Col. C. C. Mills.

The committee appointed at Montgomery, to draft by-laws for the company—Gov. F.



M. Dimond, C. S. Todd, and W. R. D. Ward—presented, through their Chairman, Col. Todd, a set of by-laws, and after some slight amendments, were unanimously adopted.—These by-laws fix the domicile of the company in Marshall, Texas. They give to Texas the majority of the Directory; fix the number of Directors at 19. They constituted two standing committees—an Executive Committee, and a Committee on construction. The Executive Committee was not located at any particular point, but left to hold their meetings at such times and places as the interests of the company may demand. The Committee on Construction is located in this place, clothed with full power to contract for the construction of the work, and to exercise a general supervision over it. The by-laws appointed a Treasurer in New York, and a Sub-Treasurer here. The Treasurer is required to deposit the funds that come into his hands in such banking house in New York, to the credit of the company, as may be selected by the President, or the Executive Committee. The Sub-Treasurer is required to keep his deposits in some bank in New Orleans, to be selected by the Committee of Construction. Each Committee, and each Treasurer, is required to transmit in the other full monthly reports of the proceedings in their respective departments, thereby being able, at all points, to show the true state of the affairs of the company, and at all times to be kept open to inspection. The Board of Directors are required to hold semi-annual meetings; one in New York, and one in this city, alternately, commencing in New York, on the first Monday in October, 1856. The Board of Directors are to be elected by the stockholders; the first election to take place in New York, on the said first Monday in October next, and annually thereafter, at such place as the stockholders may decree. All officers and agents entrusted with the funds of the company, are required to enter into bond, with not less than two good and sufficient securities, conditioned for the faithful discharge of their duties. The by-laws, in fact, guard every point, and provide for every contingency.

In the course of the proceedings, the \$600,000 paid stock came up. The Board met the question in the proper spirit; not by repudiation, but by owning the debt, at the same time insisting on its enormity and ruinous consequences, before the holders. They then passed a resolution, inviting the holders of this stock to come up to the office here, and relinquish it, and take in lieu thereof, the 5 per cent. stock of this company. The holders resident here, and many in Smith county, magnanimously came forward and surrendered the full paid for the 5 per cent. stock, in lieu thereof, leaving not the least doubt that every dollar of this full paid stock will be extinguished very soon, and put all parties on an equal footing. This noble act of the holders of this stock, has at once thrown off a debt of \$570,000 from the shoulders of this company. The cry is, "we want the road, not the stock." The stock is a minor consideration with a people starving, as we are and have been, for the want of some sure means of transportation. I think, Mr. Editor, that we have truly bright prospects before us, soon to shove this great Southern Pacific Railroad forward, at a rate to astonish the age. I think now, sir, the last rag of sail may be unfurled to the breeze in safety, and with confidence that the voyage westward, even to the Pacific, will soon be made. By

the way, I will here say that the company has just purchased 1000 tons of iron, and ordered it to be shipped immediately. Our contractors are, at this time, shipping large quantities of provisions from Cincinnati, for their hands. The citizens here are taking stock, and paying in money, and putting hands on the road. You will excuse the length of my communication, as I could not well give what I thought would be interesting in fewer words.

Respectfully,

J. M. CURTIS,

Sec'y. pro tem., of Board Directors.

#### MEMORIAL

*To the Honorable the Senate and House of Representatives of the United States, in Congress assembled.*

The undersigned would respectfully state that he presented a Memorial to the Thirty-first Congress, proposing to establish a line of Mail steamships between the western coast of the United States and the free ports of China. That memorial was referred to the Committees upon Naval Affairs, and after mature deliberation the Naval Committee of the House of Representatives reported a bill in conformity with the proposals, to establish the line; but owing to the late period at which the report was made, the bill could not be reached for action before the adjournment of that session.

The undersigned would further respectfully state that he was the first to suggest this line, and for a long period he has sought to obtain its establishment, believing that it would give the commercial preponderance to our Republic. In the prosecution of these efforts, he laid proposals before the Navy Department, under the administration of Mr. Polk. From that time the establishment of the line has been recommended, by either the President, the Secretary of the Navy, or the Secretary of the Treasury, to each succeeding Congress.

Since the period of the first proposal by the undersigned, events tending to the increasing greatness of our country have occurred. The rich mines of California have been added to our national wealth, and the western shores of the Republic are open to the reception of that Asian Commerce which made Tyre and Alexandria, Genoa and Venice, in their succession, the markets of the world, and which by after changes, gave successive power to Portugal, Spain, and Holland; and the enjoyment of which, by England, makes her the first commercial power of modern times. More favorably situated than any of the Ancient Cities, San Francisco waits but a steam connection with China, to enable her to surpass their commercial grandeur. Central between the Continents of Asia and Europe, and producing the grand staples, cotton and tobacco, the United States requires but this Great Western Mail Steam Line to make her the depository and exchanger of their respective productions, and to secure inalienably the proud position of mistress of the commercial world.

Great Britain by the superiority of her mail facilities, forestalls and secures the first advantages of commerce with China and the East, and by her overland mail route, she has made all other nations dependent upon her for their commercial information, received always by them after she has had the first intelligence. By the way of Singapore, Aden and Suez, the mails are conveyed from Canton to London in sixty-five days, and to the

United States in about seventy-seven days. If we establish a Steam Line to Shanghai, letters, passengers, and light freights can be transmitted from our coast upon the Atlantic to the coast of Asia, in but little over forty days by the present means of conveyance, but should a railroad be made across our possessions to San Francisco, the entire distance from New York to China, may be traversed in twenty-four days. England and the whole of Europe would then be dependent upon us, not for mail facilities only, but for the products of Asia, which would be obtained by us in exchange for our own. The free introduction of our tobacco would abolish the use of the poisonous drug opium, while our cotton, instead of being carried three thousand miles across the ocean to be fabricated by foreign labor, would leave its reward for industry and art in the hands of our own countrymen.

Impressed with the belief that great advantages would accrue to our whole country, and desirous to aid in the development of her resources and power, the undersigned proposed to establish this line upon the following terms:

1st. The line to consist of six steamships of not less than three thousand tons each, with suitable power to make them equal in speed to any steamers of their class now upon the Atlantic.

2d. The steamers to be built as *War Steamers*, under the supervision of a naval constructor, to be appointed by the Secretary of the Navy, and the ships not only to be properly pierced for mounting a heavy battery, but to carry in time of peace four guns of large calibre, properly mounted and equipped, to perform all the naval service in the course of their routes in the north Pacific as it may be allotted by the Secretary of the Navy, and also the Mail Service between the United States, the Sandwich Islands, and China.

3d. The undersigned to receive no other pay for these services, than the amount of postages which may arise from such mailable matter as is transmitted in the said ships, at such rates as may be established by the Post Master General according to law; the Government retaining the right to cancel this arrangement, and assume the collection of postages as in other cases, and to allow and pay in lieu thereof, the same rateable compensation in proportion to the distance to be run, as was allowed by law to E. K. Collins and his associates, in establishing the Liverpool Line.

4th. In consideration of the establishment of the line upon these conditions, and for the purpose of aiding in the immediate construction of the said ships, the Government to advance from time to time, as required towards the cost of construction of the ships, in its six per cent. coupon bonds, having ten years to run, one half the amount of the postages which the Post Master General shall estimate, will arise in the term of the contract from the said service, provided the said estimate for the purpose of the advance shall be the same amount as is paid by the English Government for the East India and Chinese Mail Service.

5th. The undersigned to give full and satisfactory security that the amounts thus advanced shall be faithfully and economically applied to the building of the said ships, the accounts of, and disbursements towards the said ships to be open to the inspection of such



officers as the Secretary of the Navy may appoint.

6th. When the steamers are finished and upon the line, the undersigned to receive only one-half the mail pay arising from the said service, until the whole amount advanced shall have been paid off by him, or from the mail service, and until so paid off, the Government to hold a lien upon the said steamers, in such form as the Secretary of the Navy may require.

7th. The government to have the right at any time to take the said steamers at a fair valuation for naval purposes.

8th. The construction of the ships to be commenced immediately after the passage of the act and completion of the contract, and three of them to be on the line within two years from the date of contract, which is to continue for ten years from commencement of the service—and the ships to be kept in complete and thorough repair and effectiveness throughout the said term.

The undersigned would respectfully beg to renew his proposals in accordance with the above, and to present the Report of the Naval Committee of the House of Representatives with the Bill, as part of this memorial.

AMBROSE W. THOMPSON.

WASHINGTON, Jan. 28, 1853.

Since the presentation of the foregoing memorial, it has occurred to the undersigned that a brief exposition of the present, and some of the projected mail steam lines of England, together with some commercial statistics relative to trade with China, might be serviceable in bringing the subject of the proposed line before Congress.

This information is derived from British Parliamentary Reports, and other official sources, and may be relied upon for its correctness. It is given as concisely as possible—much more might be added—but this will serve to show the great advantages which must arise to the whole country by the early establishment of the Chinese line.

The accompanying map represents, upon the ocean portions, the steam mail lines of Great Britain colored yellow, and the mail lines of the United States colored red. On the right hand side, and at the upper part of the map, is England. From it westward extend six mail steam lines; one of these only is American—the Collins line. There is therefore one English line to Halifax, one to Boston, one to New York, one to Saint Thomas, where it branches and extends by a line to the Bahamas, another to Havana, another to Vera Cruz and Tampico, another to Dominica and other West India Islands, and on to Demerara, another to Chagres; the fourth line, by the Cape Verde Islands, around the Cape of Good Hope, to Mauritius, and onward to Australia; the fifth line to Lisbon, where it branches, one line extending through the Mediterranean to Alexandria, the other running on southwestward to Madeira and St. Vincent, and down by the Cape of Good Hope, and up by the west coast of Africa, and on, touching at Madagascar, Ceylon, Singapore, and up to Hong Kong—from whence it is proposed to extend it westward, across the Pacific, to the British Possessions in America, at Vancouver's Island. Another British line has been actually commenced from Panama to Australia, touching at Otaheite, and extending from Australia to China. These are the great ocean routes of England; but besides these main lines are the

shorter ones connected with her overland mail to India and China. These connect with the Mediterranean line at Alexandria, by the land route to Suez, from whence the steamers traverse the Red Sea to Aden, Bombay, Bengal, Madras, Calcutta, &c. In South America also, all the ocean mail facilities are afforded by British steamers. On the Atlantic a line connecting with the "Cape" line at St. Vincent's, extends to Pernambuco, and thence to Bahai, Rio Janeiro and Montevideo. On the Pacific side, nearly opposite, a line extends from Valparaiso, touching at Arica, Lima, Guayaquil, and connecting at Panama with the West India line. Thus it will be seen that our own country, South America, the islands of the Atlantic, the islands of the Pacific, and Asia and Africa, are encircled by the British steamers, whose courses are like a net-work, and by which is secured to England the first and best fruits of the commerce of the globe. Nor is this all—not one of her mail steamers carry less than two heavy guns, and in every port to which they sail there is stored an additional armament, to be placed on board whenever it may be required.

By her Cape of Good Hope line, and by the advantages of her overland route, England has secured the trade and dependence of the East Indies, and almost the monopoly of the trade with China. By the peculiar system of government in the East Indian dependencies, she forces the cultivation of opium, and forces that drug into the Chinese markets. Its annual sale now amounts to nearly thirty millions of dollars, and with that amount, and the amount of cotton and other fabrics which England sends to China, that country is annually indebted to Great Britain some \$20,000,000. This yearly drain would have ruined the commerce of China, but for the American trade. Our indebtedness to that country reaches nearly half that sum, and bills are drawn on American account, payable in London, and for which the specie or its equivalent is remitted by us to that city.

Some idea of the vastness of the Asiatic commerce may be gathered from the statistics of the Tea trade alone, between England and China; and, as a matter of deep interest, the statistics of our own trade, as compared therewith. It has been but sixty years since the American trade with China began, and therefore to make the comparison perfect, the statistics of both are given for that period.

In the first half of this time, that is from 1792 to 1822, England imported of tea from China.....737,637,740 lbs  
Or an average of 24,587,591 pounds per year.

The total value of her trade with that country, in this period, was.....\$1,874,813,474  
Or an annual trade of 63,160,449 dollars, and from which the Government of Great Britain derived in this period the aggregate revenue of 440,233,422 dollars. In the succeeding thirty years, that is from 1822 to 1852, the quantity of tea imported by England reached the aggregate weight of 1,208,045,111 pounds, or an annual average of 40,268,170 pounds. At the beginning of the term the yearly import was about twenty-three millions of pounds, and it now averages about fifty-four millions of pounds annually. In this last thirty years, the English derived in duties from this tea trade alone 550,311,614 dollars; or a yearly revenue of 18,343,720 dollars.

The first voyage from the United States to China was made in 1785, but the trade was not fairly opened until 1792; from that period it has continued to increase, until our importations of teas now average about 16,000,000 annually. The total value of imports from

the commencement of the trade to this time, has reached the amount of \$258,858,283; our exports have amounted to \$86,260,264; leaving to be paid in the precious metals, \$172,598,019.

From the beginning of the trade up to 1827, specie (principally silver) was sent direct to China from the United States, and at the end of that period the amount thus shipped was \$88,851,606.

In 1827 the opium trade, before alluded to, had so far increased from the British possessions in India to China, that the latter country was indebted to England to a large amount, and as a consequence to this, American Bills, payable in England, began to be substituted for shipments of specie, and hence the amount of coin sent from 1827 to 1834 reached only the sum of \$7,988,616, and the American Bills on Chinese account, payable in England, amounted to \$16,657,476.

Since 1834 nearly the whole difference between our exports to and imports from China have been settled in this manner, requiring a consequent export of specie, or its equivalent, to England, to meet the bills thus drawn; and in the time named, that is since 1834, the absolute drain by England of our precious metals for these Chinese bills, has been \$75,757,797.

This enormous drain of the country's wealth is the more burdensome, because it is *unnatural*. Our products and industry are capable of paying for all the Asiatic productions which we can import for use or sale to other nations, and it may safely be asserted that *our productions*, when increased in value by British art and labor, do actually pay for nearly the whole amount of teas and raw silks imported by England from China. Our cotton is thus made to pay a premium to the labor of England, which is a loss to the American manufacturer and mechanic.

No better evidence of this need be given than the following statement of *one year's* exports from England, and the exports of the United States for the same year, of fabrics of cotton and fabrics of wool to China. It is as follows:

#### Exports from England to China.

##### COTTON GOODS.

|                           |                |
|---------------------------|----------------|
| Unbleached Muslins.....   | 1,792,321 pcs. |
| Bleached Muslins.....     | 645,357 "      |
| Twilled Cottons.....      | 133,591 "      |
| Calicoes or Chintzes..... | 75,174 "       |
| Cotton Handkerchiefs..... | 61,480 doz.    |
| Cotton Yarn.....          | 4,314,947 lbs. |

##### WOOLEN GOODS.

|                   |              |
|-------------------|--------------|
| Broad Cloths..... | 334,643 pcs. |
| Cassimeres.....   | 303,717 "    |
| Camlets.....      | 381,773 "    |
| Blankets.....     | 6,335 prs.   |

#### Exports from U. S. to China.

##### COTTON GOODS.

|                           |             |
|---------------------------|-------------|
| Unbleached Muslins.....   | 90,523 pcs. |
| Bleached Muslins.....     | 6,393 "     |
| Twilled Cottons.....      | 116,140 "   |
| Calicoes or Chintzes..... | 3,130 "     |
| Cotton Hdkfs.....         | 250 doz.    |
| Cotton Yarn.....          | 49,567 lbs. |

##### WOOLEN GOODS.

|                   |          |
|-------------------|----------|
| Broad Cloths..... | 615 pcs. |
| Cassimeres.....   | 967 "    |
| Camlets.....      | 4,953 "  |
| Blankets.....     | None.    |

In every one of the enumerated articles the United States can compete at this time fairly and triumphantly with England in their production. Yet, with the advantage of growing the material from which they are manufactured, our exports of these articles have scarcely reached the *one-twentieth* of our rival, who is obliged to procure the raw material from us, as the basis of her foreign trade.



The question at once arises, why is this? The answer is—England holds the command of the markets of China and the East, as she does of almost all others, by the superiority of her mail facilities; deprive her of these, or create those which are as expeditious, or more so, and the industry and genius of the American people can contend successfully with her in any market; but so long as she is possessed of the means of acquiring the earliest information, so long will she be enabled to forestall every demand, and prevent the introduction of other goods, which might compete successfully with her own.

Our country is emphatically maritime, commercial and agricultural. Its prosperity depends alike upon its adventurous spirit, its industry, and the products of its soil; the full development of these, upon extended and rapid means of intercourse with other nations. Central in our position, with two productions indigenous to our soil, and which cannot be grown to any extent in other lands, we may, by establishing proper means of intercourse, hold the commercial balance in our hands.

*Cotton* already occupies its place as the first staple in trade; *Tobacco*, without being a necessary of life, is from habit so fast approaching that position, that it must assume an export value second only to Cotton. The practice of smoking it has become general throughout Europe, and in some parts of Asia, and its general introduction into China has only been kept back by the English trade in opium, and by the difficulty of obtaining the article. Barrow, the distinguished traveler, states that all classes of the Chinese are extremely fond of it, and that even the women, when they can procure it, carry it about their persons in a silken pouch, with a small pipe, so as to enjoy its luxury in every moment of leisure. There is therefore no reason to doubt that if we had a rapid means of intercourse by steam with China, that our tobacco would in a short time nearly supersede the poisonous drug opium, and become to us an export sufficiently large to meet the exchange for silks and teas, and thus prevent the drain of our precious metals.

That commercial advantages of an extraordinary character will result from the establishment of a line of the largest class mail steamers between California and China, must be obvious; but the measure commends itself also by other considerations of great public importance. It will add to our means of protection and defence in the Pacific, six steamers of the first class, performing the peaceful duties of commerce, but armed and equipped, and ready for naval service at a moment's warning. Their courses laying through that portion of the Pacific where the largest naval squadrons have been needed, will at once release the government from keeping such a force there, and thus nearly one and a quarter millions per annum may be saved to the Treasury, for it is proposed that these steamers shall perform that naval service free of cost to the government. That there is a stern necessity for such an active naval force as these steamers will afford in the Pacific, is universally admitted. The extended and unprotected coast of California and Oregon, and their peculiar liability to attacks from sea require it, while the exposed situation of our large commercial marine in that ocean demands active measures from the government for its permanent protection.

There is now estimated to be afloat in the North Pacific, engaged in the whale fishery, 634 vessels, aggregating 223,109 tons, valued

at \$30,000,000, and yielding a yearly profit to the country of \$10,000,000, with the employment of 18,000 men. Previous to the acquisition of California, we had in the Pacific 200 vessels engaged in the ordinary carrying trade, but since that territory has become ours, the shipping has largely increased, and there were in the past year no less than 563 clearances of large vessels for California. It is now estimated that there is in the Pacific Ocean 650 American trading vessels, with an aggregate of 200,000 tons, employing 16,000 men, and making, with the whale ships included, 1284 sail, of 403,109 tons, with 34,000 American navigators, and a grand total of American property of nearly \$70,000,000. Should a war occur with Great Britain, this vast amount could be swept from the ocean by her steamers from the East India and China Seas, before a sufficient armament for its protection could sail around Cape Horn.

The Naval Committee of the House of Representatives have reported in favor of accepting the proposals made, and establishing this line at the earliest period, and the uncertainty of affairs connected with Central America, would seem to indicate a necessity that these recommendations should not longer be delayed.

We now depend entirely for information from Asia upon the British overland mail. Should difficulties arise with England, or should that country close her Asiatic mail arrangements against us, the trade of China and the East would be cut off; for, possessed of all the earliest information relative thereto, the English merchants would be enabled to forestall the markets; these rich sources of reward to American industry and enterprise would be lost, and the now necessary products of those countries might reach us as they did before our independence—through the markets of the British empire, and taxed by British regulations.

Place our country in such a position, and it would be humiliating in the extreme. As a national policy, therefore, even if it were not a national pride, it would seem wise that this line should receive such aid from government as would soonest produce its earliest establishment. With it complete, our own flag will bear and protect the elements of American commerce over the waters of the globe, and by it, and by those already upon the ocean, our citizens may, with a proud consciousness of safety entrust their correspondence in American steamers to the remotest commercial points.

From the period when our fathers landed upon this continent, the mission of our race has been to civilize and to improve. The course of other nations has been marked by conquest and oppression; ours by the spread of liberal principles and human freedom. Westward has been our course, westward it must continue, until it reaches those shores where of old the East began. This steam line is to be the forerunner as well as the medium of its further advance. By it the islands of the Pacific and the shores of Asia will be blessed by American influence, through the benefits of American commerce.

AMBROSE W. THOMPSON.

✂ The sales of Land by the Illinois Central Railroad Company in May amounted to \$293,360, at an average of about \$15 63 per acre. The average of the sales for May last year was \$12 02 per acre.—*New-York Tribune—Money article June 5, 1856.*

#### BOURBON COUNTY SINKING FUND.

AN ACT to amend an act to establish a sinking Fund for Bourbon County, and to provide for the appointment of Commissioners thereof.

§1. *Be it enacted by the General Assembly of the Commonwealth of Kentucky,* That it shall be the duty of the Assessor of tax for the county of Bourbon, in addition to his present duties, to make out a complete list of all the land and town lots and slaves not hired resident therein in said county, owned by non-residents of the county, and all slaves in said county that are owned by non-residents of Commonwealth. He shall ascertain and report the name and residence of the owner, and also the name of any agent, tenant or other person, having the control and management of such estate, whether realty or slaves, and affix to that list the value of such estate. He shall also ascertain and report what estate has been omitted the preceeding year, and make out a list and valuation thereof. He shall return all the lists taken in by him, in alphabetical order, to the chairman of the Board of the Sinking Fund, on or before the first day of May in each year. He shall also make out and return a list of all persons who fail or refuse to list their property, together, with as correct a list and valuation of their property as he may be able to procure. The persons so reported may be proceeded against by the said Board as directed, in case of delinquents in case of the revenue tax. The Assessor shall receive the same compensation per list as for the revenue tax, and to be paid by the said Board, subject to a deduction for delinquents as provided in case of revenue tax. For any neglect of duty hereby assigned to said Assessor, he and his sureties may be proceeded against as directed by the revenue law for neglect of duty.

§2. It shall be the duty of the Clerk of the County Court of Bourbon to make out and deliver to the said Board, on or before the first day of June in each year, a copy of the list of taxable property for that year which shall have been returned to his office, for which he shall receive the same compensation from said Board that he is allowed for similar services by the Commonwealth.

§3. That any payer of railroad tax on estate in said county of Bourbon may pay his tax on or before the 15th day of September in each year in which the same is due, to the Treasurer of said Sinking Fund, after that day shall have passed, the said Board shall cause to be made out a correct list of all such tax payers residing in the county or owning slaves therein, and their taxable property as shall not have made payment, and deliver the same for collection to the Sheriff of said county, or such collector or collectors as may have been appointed by the County Court of said county, the said Board obtaining his receipt therefor, to be by them safely kept. The Sheriff or collector shall add to said lists seven per cent. on the amount of tax on each list, to pay his commission, and shall forthwith proceed to make the collections.

§4. It shall be the duty of the Sheriff of Bourbon to collect said tax, and he shall give bond with security to be approved of by the County Court of said county, for the discharge of his duties as collector, and for the faithful collection and payment of said tax as required by law, which bond shall be required of said Sheriff, at the time he executes bond for the revenue. If the Sheriff shall fail or refuse to execute such bond, the said Court shall



appoint one or more collectors, who shall execute bond with securities, as required of the Sheriff, such collector shall be governed by the law regulating the duties of the Sheriff in the collection of said tax. The obligors in said bonds, their heirs, devisees and personal representatives may be made liable to said Board, by suit or motion jointly or separately, for a breach of the same, until the whole amount of the Sheriff's or collector's liability shall be discharged.

§5. The Sheriff or collector, from and after the 15th day of September, in each year, shall collect the Railroad tax due in said county then unpaid, and upon failure by the persons bound therefor to pay the same, shall distrain and sell as directed, for the collection of other taxes.

§6. The Sheriff or collector shall, on or before the 15th day of December, in each year, return to said Board a list of delinquents, insolvents and removals, as directed in the case of other taxes, verified on oath before the Presiding Judge, but in no case shall he have credit for a delinquent resident of the county, unless it shall appear that there was no personal estate or slaves upon which he might have distrained, nor for a removal, unless it shall appear that a sufficient time to collect the tax had elapsed before such removal, which list shall be subjected to the approval or rejection of said Board. In case the Sheriff or collector shall be dissatisfied with the action of the Board, the case shall be referred to the Presiding Judge, whose decision shall bind the parties.

§7. That on or before the 15th day of December in each year, the Sheriff or collector shall pay into the treasury of said Sinking Fund the amount of tax placed in his hands for collection, after deducting therefrom the amount allowed to him on his list of delinquents, insolvents and removals. Upon a failure to make such payment the said Sheriff or collector and his sureties shall be liable therefor, and be compelled to pay the amount of tax due and six per cent interest on the same from the day the tax was due until paid, and the costs and twenty per cent. damages on the amount of the principal, and a suit or motion for that purpose may be commenced in the name, and prosecuted by said Board, in the Circuit Court of said county.

§8. Upon all Railroad taxes payable to said Board that are due and unpaid on the 16th day of December in each year, fifty per cent. shall be added to the amount for the first failure, if not paid within a year from that date, fifty per cent. more shall be added—if not paid within the next year, a sale of property to pay the same shall be made as herein provided.

§9. Whenever there shall be a failure to pay said tax for three consecutive years, the Board shall make out a list of all delinquent tax payers and of the lands and town lots, adding thereto the amount of tax due thereon, the tax for the past year shall be doubled, that due the second year shall be increased fifty per cent., and that due the third year there shall be no increase. The said list shall be by the said Board delivered to the Sheriff or collector, who shall execute his receipt therefor. So soon as the Sheriff or collector receive said list he shall ascertain the first term of the County Court of that county, after the term of three months shall have elapsed, and shall advertise a sale of said property, to be made on that day which advertisement shall be made in any newspaper published in Paris, in said county, and continued in it for the space

of three months. On the day designated, he shall sell, at public auction, to the highest bidder, at the Court-house door, in Paris, for cash in hand, so much of said property upon which the tax is then due and unpaid as will be sufficient to pay the same then due for said tax, with interest thereon from the 15th day of the previous December, the Sheriff's commission of seven per cent., and the cost of advertising, and the said Board may bid in the same if there be no other bid therefor. The Sheriff or collector shall, within ten days after the sale, return to the Board an account of sales, and pay into the treasury of said Board the amount realized on the sale after payment of his commission. Should there be, from any cause a failure to sell, on the day fixed, a sale shall be made on the next County Court day thereafter. The real estate sold may be redeemed by the owner or any person for him within two years from the day of sale, by paying to the purchaser the amount of his purchase money, and one hundred per cent., per annum interest thereon from the day of sale to the time paid. If not redeemed at the end of two years the Sheriff or collector, who made the sale, or his successor in office, shall convey to the purchaser or purchasers the property purchased. The property purchased by the Board shall constitute a part of the Sinking Fund of said County.

§10. A lien for the payment of the Railroad tax shall attach upon all property and estate subject to the said tax, from the 10th day of January in each year, and continue until the tax is paid.

§11. That before the Sheriff of said county executes his bond for the collection of the Railroad tax in each year, he shall produce a receipt from the treasurer of said fund for the amount of the tax for the previous year. If the Sheriff fail to produce such receipt and execute bond for the collection of said tax at the term of the County Court of said county, that he is required to give bond for the collection of the revenue, the Court may declare the office of collector vacant, and proceed to fill it by appointment of another. But no person shall be eligible to office who is in default for any previous collections.

§12. That for the purpose of providing a fund adequate to the redemption of the bonds due from said county, it shall be the duty of the County Court of said county, when they make their levy in each year, to assess a tax of not more than twenty cents on the hundred dollars to pay the accruing interest on said bonds and to increase the said Sinking Fund.

§13. It shall be the duty of the Board of Commissioners of said Sinking Fund, by the means and increase of said fund, to protect the credit of said county, by a faithful and prompt application of the same to the payment of the interest and principal when due of the Railroad bonds of said county. They shall for that purpose, and to the extent of the annual increase of said fund, deal in exchange or negotiable notes; may deposit in any of the banks of this State, any money of said fund, upon the terms which may be agreed upon by the parties. They shall have power to purchase stock in any of the banks of Kentucky, to apply any surplus on hand at any time, to the extinguishing of any portion of the county debt by payment or purchase of said bonds, at or under the nominal value, and for that purpose may deposit any portion or surplus fund in any chartered bank in any of the Eastern cities.

§14. All bank stock purchased by the said

Board shall be held as a part of said fund.

§15. It shall be the duty of the Presiding Judge of said county, to obtain an annual report from said Board, of the state and condition of said fund, and to make a careful examination thereof. He shall also examine into the investments of said fund, and take such order to insure its safety as may by him be thought necessary, and see to its enforcement. He shall, at the same time, examine the bond of the treasurer of said fund and require additional security should the old ones be considered insufficient. He shall also have and execute a supervising control over the official acts of said Board, with power to restrain them from the exercise of any of the powers hereinbefore granted to them, when, in his judgment, the exercise of such power would be prejudicial to the interests of said county. He shall see to it that the Assessor and Sheriff or Collector executes bond with security before he enters upon the duties hereinbefore assigned to them, and cause the Clerk of said Court to make out and deliver to him a copy of said bond, and also of the treasurer's bond when a new one is executed, within ten days thereafter, which copies shall be by him carefully filed and preserved. He may take these bonds either in or out of term time. The Clerk's fees for the copies he shall cause to be paid out of the funds of the county.

§16. That the said Sinking Fund shall be set apart and devoted as well to the payment of interest on the bonds issued by the said county of Bourbon to pay for stock subscribed by said county in the Covington & Lexington Railroad Company, and for the final liquidation and redemption of said bonds, as to the payment of the bonds and interest thereon, issued by said county for stocks in the Maysville & Lexington Railroad Company.

§17. Judgment in the name of the Commonwealth for the use of the said Board against the Sheriff or Collector of said Railroad tax, his services, or the heirs, devisees or personal representatives of any of them, shall bind the estate legal and equitable of all the defendants to said judgments from the commencement of suit till satisfied. No execution thereon shall be stayed by replevin or sale or credit, but in all such cases the estate taken in execution shall be sold for money.

§18. It shall not be lawful for either of the Commissioners of said fund to become indebted thereto, either as borrower, endorser or security.

§19. That if any of the Commissioners of said Sinking Fund shall, without the authority of the Board of Commissioners, appropriate any of the funds of said corporation to his own use, or to that of any other person, or shall wilfully fail to make correct entries, or shall knowingly make false entries on the books of the corporation with intent to cheat or defraud the corporation, or any person to hide or conceal any improper appropriation of the funds of the corporation, the commissioner so offending shall be deemed guilty of felony, and shall, upon conviction thereof, be sentenced to imprisonment in the jail and the penitentiary of this State for a period not less than — years, nor more than — years.

Approved March 10, 1856.

COMMONWEALTH OF KENTUCKY.)  
Office of the Secretary of State. }

I, MASON BROWN, Secretary of State for the committee aforesaid, and keeper of the archives thereof, do hereby certify that the



annexed pages contain a true copy of the enrolled bill now on file in my office.

L. S.

In testimony whereof, I have hereunto set my hand, and affixed the seal of my office, this 9th day of April, 1856, and in the 64th year of the Commonwealth.

MASON BROWN,  
By T. P. ATTICUS BIBB,  
Assistant Secretary.

#### RAILWAY MONOPOLY NOT MONOPOLY OF TRAFFIC.

Mr. Harwood, chief accountant of the Bristol and Exeter, has rearranged and prepared for publication the vast assemblage of facts and elucidations which he introduced into some lectures on the railway system lately delivered at the Bristol Philosophical Institution. The observations are at once accurate, instructive, and amusing. They trace the varied ramifications of a mighty effort of private enterprise in behalf of the public weal, and show to what extent of usefulness that system, notwithstanding its faults and errors, has already grown. The style of the production is easy, fluent, and more conversational than argumentative. That it may be none the less convincing on that account is well shown in the subjoined extract, which elucidates the vexed contrarieties that hang upon the word "monopoly," and with which we must for the present content ourselves:—

"I alluded a short time back to what I deemed to be a general misapprehension of a term in very common use—railway monopoly. To the popular mind that phrase conveys the idea that companies have the whole and sole control over the entire traffic of the districts through which their lines respectively run; that they have the power to charge whatever fares for passengers, and whatever rates for goods, they may choose to impose; and, by inference, that, as in the case of most monopolies, the public get the minimum of accommodation at the maximum of cost. Knowing practically that those ideas are erroneous, I would wish to state what I believe to be the true facts of the case. It cannot be denied that between any two points connected by one line of railway, the company owning that line does possess a monopoly of communication between those two towns; and in that sense, and to such an extent, there is a *railway* monopoly in that district. But this is a very different thing from the popular idea of *railway* monopoly. Such a company has no control over the turnpike roads, the rivers and canals which intersect, or, if upon the coast, the sea which bounds, the district which is traversed by that railway. All or most of those means of conveyance remain at the command of the public, thus depriving that company of a monopoly of traffic, although they may possess a *railway* monopoly. Indeed, so far from their possessing a monopoly of traffic, they have by the force of competition, so stimulated the neighbouring canals in some districts, as to find in them powerful opponents, and in that opposition the public have found substantial advantage.

"Railways have been made by private enterprise, and at the cost of private capital. Individuals have embarked their funds in these undertakings, under sanction and protection of the Legislature; receiving, as an equivalent, authority to charge certain maximum fares per mile for passengers, and certain maximum tolls per ton, per mile, for merchandise. Now, if the popular idea of monopoly was

correct, we might, at least expect that companies would be able to obtain their monopoly prices; that is, that they would be able to realize from the public the full rates for the conveyance of passengers and goods which Parliament may have authorized them to levy. Such, however, is not the case. In the great majority of cases, companies are forced, by competition with other modes of conveyance—a competition of which the public at large are not cognisant and which they cannot therefore appreciate—to accept rates for the conveyance of goods very much smaller in amount than the rates which Parliament had authorized them to charge. I am satisfied that the experience of every company would, more or less, verify this assertion. Where, then, is railway monopoly as generally understood? It does not exist, but on the contrary, the true railway monopoly gives to the public a fair quicker, safer, and cheaper conveyance than they previously, or would otherwise, have had at their command.

"I would, indeed, meet the popular cry of railway monopoly by the distinct assertion that, at the present moment, there is no trade or pursuit in which competition is more active or more intense than that of railway merchandise traffic. The very facilities which railways extend to manufactures and traders create and stimulate the competition which they themselves experience. If railways enable any manufactures in one district to extend their market in any given direction, they also enable manufacturers of the same commodity, in some other district, to push their produce in the same direction, thereby at once creating a competition between those two companies to preserve that traffic to their respective lines. The goods manager of any leading company would I am sure bear witness to the intensity of the competition which he feels in the conduct of his business; and I cannot but think that, in reiterating the cry of railway monopoly, the public show a total misapprehension of the subject, an utter disregard of the rights of shareholders, and a forgetfulness of the great advantage derived at their expense.

"As I deem this cry of railway monopoly to be unjust, so I deem it to be injurious both to the public and to companies. The interest of both parties are so interwoven as to be almost identical. Any attempt to separate them, or to lead either to view the other as an antagonistic party, must be injurious to both. As in the common business transactions of life, so in railway business, the interests of buyer and seller are mutual. As the public must be prepared to pay a fair price for valuable services fairly rendered, so railway companies must prosper with the prosperity of their customers. If the public fully appreciated the fact, that companies were subject to the same competition which they themselves experience in their respective pursuits—only in a more extended and intense degree—they would not grudgingly pay charges which are not made upon the monopoly scale authorized by Parliament, but which are modified by the force of that very competition from which they erroneously deem railway companies to be exempt.

"Moreover, the public are very deeply interested in the prosperity of railway companies. In proportion to the success of a company, in proportion to the profits which they realize, and to the dividends which they pay to their shareholders, must, in the long run, depend the extent and the nature of the accommodation which they can extend to the dis-

trict through which their railway runs. If those profits are fair and reasonable, that is, if the shareholders obtain a fair result for the money which they have expended, they will naturally be willing to increase their investments, in order to improve and consolidate their property; and, in those increased investments, the public will find increased advantage. If, on the other hand, these profits are below a fair and reasonable amount, if they are so far reduced, either by excessive outlay forced upon a company in any of the numerous channels of expense, or by competition sanctioned by Parliament, then the public must suffer, because, in one way or another, they will have to pay interest upon an amount of capital larger than what was necessary. Any attempt, therefore, on the part of the public, to reduce the fair and reasonable profits of shareholders, will assuredly react to their own disadvantage.—*Railway Times*.

#### THE OVERLAND RAILROAD.

Below we give an article from the New Orleans Picayune, bearing directly upon the route from Vicksburg, Mississippi, through Louisiana and Texas to the Western line at El Paso as the most approved. The road takes nearly the parallel of 32 degrees to that point. About 190 miles has been provided for by the States of Mississippi and Louisiana to build the road to the Texas line. From that point to El Paso, a distance of 990 miles, grants of lands, sufficient to make the road, have been given. From El Paso to the Colorado in California, a distance of 505 miles, is the only unprovided portion of a continuous line from the Mississippi to the Pacific.—From the Colorado to San Diego, on the Pacific, a distance of two hundred miles, that State is ready and willing to provide. We hope that Congress will take early notice of this important route, and grant such aid of lands as will secure the success and completion of this great highway across our own continent to the Pacific.—*Cotton Plant, May 31st*.

"We find in the Vicksburg papers a letter addressed to the Hon. John M. Sandidge, one of the Representatives in Congress from this State, and W. A. Lake, a Representative from Mississippi, by N. D. Coleman, the efficient agent of the Vicksburg, Shreveport and Texas Railroad Company. The object of Mr. Coleman is to take advantage of recent events in Central America, demonstrating the great interest of the United States, in an overland route to the Pacific; to urge the claims of the great enterprise with which he is connected, as the most direct, desirable and practicable means of effecting that public work.

There is a bill before Congress, introduced by Mr. Weller, of California, into the Senate, which, with some amendments, Mr. Coleman thinks would make a complete road across the continent in a very few years, connecting it with the Vicksburg and Shreveport Railroad, chartered by this State, and already in progress, and with the Western Railroad, chartered by Texas, and also under way.

The Vicksburg road is 190 miles in length, commencing on the Mississippi river opposite to Vicksburg, running through North Louisiana, and terminating on the Texas line, west of Shreveport. The capital stock is \$4,000,000, of which there are private subscriptions to the amount of \$900,000, and the State of Louisiana has authorized a subscription to the amount of \$800,000. The whole road is under contract to an enterprising company, with



large means, who receive pay for half the work in stock of the company. The road is sure to be completed. At the border of Texas it unites with the Texas (Western) Railroad, which has a grant of sixteen sections of land for every mile of road completed—a grant which is so large and valuable as to be considered sufficient, under good management, to build the road. Besides, there are calculations upon the improved value of the lands as the road advances, and on the aid of the General Government in lands, and the direct aid of the State in money and lands, if more is needed. The means are thus said to be secure for the completion of a railroad for nine hundred and ninety miles along the line of 32° of north latitude. If that route were adopted at once, and provisions made for the continuance and completion of the line to the Pacific, the means for the 990 miles would so rise in value and demand as to be abundant, if not redundant.

From El Paso, the Western terminus of the Texas road to the Colorado in California, across New Mexico, and the Gadsden purchase, is according to the official reports, 505 miles and thence across the State of California to San Diego, the Pacific, not over 200 miles. For this last section the State of California is expected to provide, and is able and willing.

The whole distance by this route is therefore about 1690 miles, of what the States and citizens of Louisiana, Texas and California will have provided for 1495 miles, leaving only 505 miles through the territories of the United States, to be built entirely by the Government of the United States. Small contributions of lands might possibly be needed on one of the other tracks, but the amount would be comparatively insignificant and would probably be not needed at all.

This positive provision for nearly five-eighths of the distance of the shortest, best and cheapest road, is powerfully urged upon the attention of Congress as a decisive reason why it should demand the preference of Government at once, and the powerful pleas of public interest, which are developed before the country by the events which show the dangers and uncertainties of the Isthmus routes through the foreign countries, are pressed as commanding inducements for the immediate commencement of the work.

The letter of Mr. Coleman is well written and timely, and ought to engage the immediate attention of those members of Congress who have not been already awakened to the importance of the action which he recommends.

#### PACIFIC RAILROAD MEETING.

According to previous announcement, the citizens of Jackson and vicinity assembled in the Representatives Hall, in the capitol for the purpose of listening to an address on the subject of the Pacific Railroad by Hon. T. Butler King, of Georgia, which, by special request of a committee of the citizens, he had consented to deliver.

On notion of Hon. J. M. Moore, the meeting was organized by calling Hon. Jno. E. Freeman to the chair, and requesting W. S. Yerger to act as secretary.

The chairman explained the object of the meeting in a few brief and pertinent remarks, after which the Hon. T. Butler King was introduced and delivered the proposed address.

The following resolutions were then offered

by G. S. Yerger, Esq., and, on motion, unanimously adopted.

*Resolved.* That the thanks of this meeting be and are hereby tendered to the Hon. T. Butler King for the able address he has just delivered upon the practicability and advantages of the proposed Railroad to the Pacific through the State of Texas.

*Resolved.* That in the opinion of this meeting, the proposed line of railway to the Pacific, through Texas, is the only practicable route for such road.

*Resolved.* That a committee of five be appointed by the chairman to ascertain all the facts in relation to said proposed line' showing its superior advantages over all others; and that said committee, either by an address or some other means, make known these facts to the public of Mississippi.

The chairman then appointed the following gentlemen on the committee provided for in the third resolution, viz. Geo. S. Yerger, Gov. McRae, Wirt Adams, D. C. Glen, George Fearn.

On motion of Mr. George Fearn, the chairman was added to the Committee.

On motion of Geo. S. Yerger, Esq., the meeting adjourned.

JOHN D. FREEMAN, President.

W. S. YERGER, sec.

#### SALINE COAL AND MANUFACTURING CO.

We have before presented many of the important facts of the enterprise, in which this company is engaged. In the extent of its contemplated operations, and in the circumstances under which it will commence, this enterprise ranks among the most important and interesting industrial movements of the country. It proposes no less than to supply the demand for railroad iron in the Mississippi Valley, at a price below the ability of foreign competition, relying for this end upon a concentration of mineral and manufacturing elements, and a physical and commercial adaptation to the iron manufacture, afforded at no other point of country than that secured for the company's operations.

We are tempted, at the outset, to quote a passage (applying especially to the region embraced by the operations of the Saline Co.) forming part of an address delivered by one of the ablest iron men in this city, before a late meeting of the members of the American Geographical and Statistical Society.

"The valley of the Ohio and its tributaries, and the valleys of the Mississippi and Missouri and their tributaries, have resources in the way of raw material, cheap food, facilities for transportation, and a local demand, which place them far above any region on the habitable globe.—A century hence, when the world will require its 100,000,000 tons of iron, more than one-half of it will be produced in our great West. The traveler who passes down its great rivers at night, will be lighted on his way by the answering fires of 10,000 furnaces, so that the 'ineffectual moon shall pale' before the mighty glow of human industry. The product will bid that mighty valley, with its hundred millions of freemen, to the rest of the Union with iron bands not so durable but typical of the fraternal patriotism of this great country, blessed by bountiful Providence with every good and perfect gift.

Taking A. S. Hewitt, Esq., of New York, as able authority, let us quote the conditions which he stipulates for the successful prosecution of the manufacture and commerce of iron. We quote from the address already referred to:

"First. An adequate supply of the requisite raw materials; ore, limestone, and mineral coal, or charcoal can only be used, as we have seen, to an insignificant extent.

"Second. These raw materials must be geographically so situated as to be brought cheaply together, for the value of raw material does not more consist in what it is, than in *where it is*—

*a fact too much overlooked in the mining projects of the day.*

"Third. There must be cheap means of transport to market.

"Fourth. There must be sufficient density of population to insure labor at a moderate cost.

"Fifth. There must be adequate capital to build and carry on the works.

"Sixth. There must be the skill to manage them in the most economical manner.

"Seventh. There must be indomitable energy, and strict integrity in the management; that is to say, the iron business can only exist on a large scale, where the people are essentially industrious, intelligent, energetic, and honest.

Let us apply these conditions to the circumstances of the Saline Company's enterprise.

First. An adequate supply of the requisite raw material,—ore, limestone, and mineral coal.

The Saline property, of 14,000 acres, has 4,000 acres of hematite ore lands, in which the deposit of ore is inexhaustible and beyond calculation. The property has also six seams of Black band ore, or carbonate of iron, a remarkable and valuable quality—these seams being of a total thickness of eighteen inches, and underlying at the rate of five millions tons, to every square mile. The hematite ores yield from 49 to 56 per cent in the furnace, and the carbonates from 30 to 40 per cent;—Dr. David Dale Owen being responsible for the analysis.

There are seven workable seams of coal on the property, of a total thickness of 32 feet, and containing within the limits of the property 234,000,000 tons of coal! This coal gives 55 to 65 per cent of coke, containing from 52 to 69 per cent of fixed carbon.

The mineral elements appear to be "adequate."

Second. Geographical situation of raw materials, so as to be brought cheaply together.

All the mineral deposits outcrop within a section of two miles, and all the coal seams can be worked above water. The iron ore is easily worked, mostly from the surface.

Adding the numerous other valuable and accessible materials for building and manufacture, and the site presents the most remarkable collocation of manufacturing elements to be found in the country. This "mining project" at least, has not "overlooked" the value of situation.

Third. Cheap means of transport to market.

The Saline property is on the bank of the Ohio river, 106 miles above its mouth, and commands the immediate navigation of the Ohio, Mississippi, Missouri, Cumberland, Tennessee and Wabash rivers. It is at the centre of the great natural system of the river navigation of the West. So, too, it has the advantage of the entire Western railroad system. "Cheap means of transport," at least as cheap as the Western country will enjoy at any time until some new agent of locomotion is discovered.

Fourth. Sufficient density of population to ensure labor at a moderate cost.

Whatever the present population of Illinois may lack in numbers, is compensated greatly by the cheapness of living there. But sparsity of population, if admitted as a comparative term, applying to Illinois, is but a temporary condition yielding to a ceaseless immigration.

Fifth. Adequate capital.

\$3,000,000 will start the works now proposed \$2,000,000 are subscribed. If \$300,000,000 can be diverted as it has been, to the West, to establish railroad enterprises, averaging under 5 per cent profit, surely \$3,000,000 or \$30,000,000 can be commanded by enterprises promising 35 per cent.

The Sixth and Seventh conditions, stipulated by Mr. Hewitt, do not require discussion. He uses them in contrasting nations, and would not introduce them in comparing the enterprise of the West with that of the Atlantic slope. If ever they were fulfilled, however, in any part of the world, they are found in the Western States.

The permanent elements governing the cost of importation of iron ore, first cost in Wales, manufacturers' profits, marine and inland freights, and commissioners Government duties, may be set



down as an unsettled element. The permanent elements of cost, however, will not enable the Welsh manufacturers to lay down iron in the Mississippi Valley at below \$40 a ton.

Against this, the Saline mills will make pig at \$10 a ton, and convert into rails at \$17.50 a ton, inside of \$30 first cost of rails at the mill, or as low as the lowest price in Wales. This estimate, based on the actual cost of ore at one dollar a ton, and coal at three cents a bushel, covers all the items of cost of rails. It would require an article, which we propose giving, to prove the fact of this cheap actual production. Few understand why iron costs from \$16 to \$25 in the pig in other iron regions, and from \$20 to \$30 for conversion. Yet we can show clearly and upon the best evidence of iron masters and statistics, how pig iron costing \$25 for conversion in any given district can be made into rails at the Saline Works for \$17.50.

Reserving the evidence of this fact only for a space in our columns due to its true importance, we would merely suggest at present, how absolutely and permanently the Western mills could avert the power of foreign competition, and command the vast market due to their own local position.

The effort, now making, to obtain the means to establish this great enterprise, will be soon successfully concluded.

Under such ample inducement of demand, and with so remarkable facilities for supply, the manufacture of railroad iron will then commence and develop to an extent and importance due to one of the naturally good interests of the mighty West.

[From the Washington Union.]

#### LANDS GRANTED TO IOWA FOR RAILROADS.

—The act passed by Congress granting lands to Iowa for railroad purposes, and recently approved by the President, sets apart lands for four different railroads, about forty miles apart, running from the Mississippi to the Missouri river, thus crossing the whole State four times, from east to west, and averaging nearly 300 miles in length. The following is an estimate showing the quantity granted which would accrue for each road to the State, allowing that there would be unsold lands enough without the prescribed limits of fifteen miles on each side of the road, to satisfy the grants:

| Routes.   | Est. length<br>in miles. | Acres.<br>granted. |
|---|--------------------------|--------------------|
| Dubuque, via Fort Dodge, to Sioux City.....                                 | 295                      | 1,132,800          |
| Lyons City, via Maquoketa, due West, to the Missouri river.....             | 325                      | 1,248,000          |
| Decorah, via Iowa City and Fort Des Moines, to Council Bluffs....           | 290                      | 1,116,600          |
| Burlington, west to the mouth of the La Platte river.....                   | 255                      | 979,200            |
| Total.....  | 1,165                    | 4,476,600          |
| Deduct from the Des Moines river grant, which crosses four times, 10x4..... | 40                       | 133,600            |
|   | 1,125                    | 4,323,000          |

In order to protect the lands granted from sale and location, the Commissioner of the General Land Office has withdrawn, as we heretofore stated, all the lands in this State south of the Dacorrah district, south of the line between townships 92 and 93 in the Fort Dodge district, and south of the line between townships 91 and 92 of the Sioux City district. It is designed to adjust the several grants with as little delay as practicable, in order that the lands not needed for these grants may be restored to market.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance.*

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of HOBBS & ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JUNE 17, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR.

W. WRIGHTSON, ASSOCIATE EDITOR.

CINCINNATI, . . . . . TUESDAY, JUNE 17.

#### INTERNAL IMPROVEMENTS OF TEXAS.

We have seen, in the *Galveston News*, a plot of what, in the estimation of that paper, should be a proper railroad system for Texas; and a most remarkable one it is. According to that plan, all the railroads in Texas ought to centre at Galveston, or at some other point on the Gulf. One other is allowed, and that is one which, running through Arkansas, instead of Texas, and crooking about north of Red River, finally debouches through a piece of Texas. Carefully examined, this plan leaves about one-third of Texas just where the most important line of railroad ought to be, without any, and gives the great Pacific Road to Arkansas! Why this should be planned in this way, except for the very purpose of defeating the Pacific Road, or of spiting the *Texas Western Co.*, we know not; but we should think this sort of spite would hardly "pay"—certainly it will not pay Texas. With submission to the better knowledge of the people there, we think a better plan would be something like the following:

1. The greatest breadth of Texas is about the parallel of 32°. This passes through the very heart of the country, and that part which is *least accessible* to markets, and therefore most needs railroads; besides, it is plain enough that if Texas is to have the great Pacific Road at all, she must have it on very nearly the 32d parallel. If run much north of that on the plan of the *Galveston* paper, it will belong to Arkansas, and not Texas. If run much south of it, it will cross all the ravines of the rivers and streams, be longer, out of the way, and more expensive. Come what may, if Texas is to have a great national highway through it, that road must be nearly on the route of the thirty-second parallel. Now, this being the fact, it would be much better to throw aside all local jealousies, and all fear of speculators, and look favorably on the *Texas Western Co.*, in its struggles to carry on the work. If that company is successful, it will be to the glory and honor of the State. If the stockholders, who have struggled along in spite of all obstacles, should succeed, and find themselves repaid for their labors, who can complain? Who is injured by their good fortune?

2. There is no reason in the world why the two or three well-located roads tending towards Galveston should not be made. They should be encouraged; and by the State loan of \$8,000 per mile, *can* be made, and that speedily. But can they be made if, through hostility to the Pacific Road, they lend themselves to a vain controversy, and thus defeat all measures? Looking on at this distance, we should say that all efforts should be used to promote union and harmony in the railroad interest. To do this, let all unite in getting the State loan of \$8,000 per mile, and let the *Texas Western Co.* be treated fairly. This is the only way to secure the Pacific Road to the State of Texas.

3. It is supposed by some of the inhabitants on the rivers, that they may be improved to advantage, and if so it ought to be done, and thus, by the joint navigation of the streams and two or three good railroads to the Gulf, the whole southern half of the State would be amply supplied with facilities of transportation; while the northern part would have the great Pacific artery, leading the commerce of a continent through Texas. By these arrangements, Texas would, for State loans to the amount of ten or twelve millions, have a magnificent system of internal improvements. On one side she would debouche on the Pacific; on another, on the Atlantic; and on the third on the Gulf of Mexico. She would hold the great prize of internal commerce. What would not the effect of these improvements be? She is now growing at a most rapid rate. What would she not accomplish then? She would be the Empire State of the Gulf, and sit Queen on the shores washed by its waters. She would look out upon islands some day to be ours, and rise supreme over the vast domain of the Caribbean Sea.

But this she will not do by indulging in idle jealousies, and encouraging jealousies towards the *Texas Western Co.* On the contrary, let them be encouraged in their enterprise, cultivate union and harmony at home and abroad; proceed in the spirit of fairness. Let the State make its loan, and thus build up a railroad strength, and not waste the energies of the State in doing what the State cannot do—make all its own improvements.

We have spoken thus freely because we earnestly desire the Pacific Railroad to succeed; and we know it will be the easiest thing in the world, by cherishing jealousies toward companies and men, to nullify all the real advantages Texas has for that scheme.

We believe a railroad convention is to meet in July, and it would be well for that assemblage to consider well the aspects of the case, and the consequences of unnecessary jealousies. The Legislature will also meet, and we hope they will perfect the Loan Bill, and provide whatever is necessary to carry forward the internal improvements of that flourishing State.

#### CINCINNATI & MACKINAW R. R.

We noticed, in our last, that the Government had granted a large body of land to what we term the Cincinnati & Mackinaw Railroad. This is included in the grant to Michigan, commencing on the State line, and passing through Hillsdale, and Lansing, the seat of government. The reader will observe one thing, however, that the government grant terminates on Traverse Bay and not at Mackinaw. The two points are about seventy miles apart. This limitation to Traverse Bay we regret, and cannot help hoping that the grant may be extended, so as to cover the intermediate distance. There is not, that we know of, any reason for not going to Traverse Bay; but, there is great reason why the road should be continued to Mackinaw, and these reasons we will briefly give.

1. To carry forward the railroad either into Canada, or the Upper Peninsula of Michigan, the Lakes must be crossed. Now, at Mackinaw the ferriage is but *four* miles, while from Traverse Bay to Noquet Bay (the route proposed), the distance is *sixty* miles. This obstacle is immenso. No travelers, or even freight, will make a Lake ferriage, between two railroads, of sixty miles, if it can be helped. It appears to us, therefore, that the road which terminates at Mackinaw will supersede the other, in regard to business beyond the Lake.

2. Supposing the route by Noquet Bay to the copper region is a good one, and necessary to commerce, which we are quite willing to believe, is it not equally obvious, that for all the Canada trade, and much of that on the Lakes, the Mackinaw line is superior? At Mackinaw there is a narrow ferry, and then crossing the peninsula, at a narrow place, we arrive at the Sault St. Mary; and there unquestionably is to be a great point, connecting with both the British Possessions, and with the commerce of Lakes Superior and Huron. It seems to us, that Mackinaw should be made one termination of this great line, and as the lands are unsold, that branch should have its proportion.

WISCONSIN CENTRAL R. R.—We learn that the Wisconsin Central Railroad is now completed as far as Geneva, Walworth county, and that the trains now run regularly from Chicago to Geneva. Between Geneva and Whitewater the grading is nearly finished, and the track will shortly be laid. The opening of this new thoroughfare will give a great impulse to the growth of Whitewater.



## MICHIGAN R. R. BILL.

We give below a bill which has just passed both Houses of Congress donating lands to the State of Michigan for the purpose of aiding in the construction of her railroads. There is one point in the bill in which a radical mistake is made, and that is this: It makes the grand north and south trunk line terminate seventy miles south of its natural terminus. In other words, it makes Traverse Bay the terminus instead of Mackinaw Straits. This destroys at once its character as a grand arterial line taking in the commerce of the Canadas and the upper lakes and distributing them at every stage of its progress over the whole Union.

The project of a trunk line from Mackinaw Straits to Pensacola on the Gulf of Mexico is one of the grandest and most promising undertakings that was ever presented to the American people. But that project to be successful must begin and end at the points at which nature has fixed its termini. And we trust it is not yet too late to extend the provisions of this act so as to cover the whole ground to the Straits.

The 1st section enacts—That there be, and is hereby granted to the State of Michigan, to aid in the construction of railroads from Little Bay de Noquet to Marquette, thence to Ontonagon, and from the two last named places to the Wisconsin State line; also from Amboy, by Hillsdale and Lansing, and from Grand Rapids to some point on or near Traverse Bay; also from Grand Haven and Pere Marquette to Flint, and thence to Port Huron, every alternate section of land, designated by odd numbers, for six sections in width on each side of each of said roads. But in case it shall appear that the United States have, when the lines or routes of said roads are definitely fixed, sold any sections, or any parts thereof, granted as aforesaid, or that the right of pre-emption has attached to the same, then it shall be lawful for any agent or agents to be appointed by the governor of said State to select, subject to the approval of the Secretary of the Interior, from the lands of the United States nearest to the tiers of sections above specified, so much land in alternate sections, or parts of sections, as shall be equal to such lands as the United States have sold or otherwise appropriated, or to which the rights of pre-emption have attached as aforesaid; which lands (thus selected in lieu of those sold, and to which pre-emption rights have attached as aforesaid together with the sections and parts of sections designated by odd numbers as aforesaid, and appropriated as aforesaid) shall be held by the State of Michigan for the use and purpose aforesaid: *Provided*, That the land to be so located shall in no case be further than fifteen miles from the lines of said roads, and selected for and on account of each of said roads; *Provided further*, That the lands hereby granted shall be exclusively applied in the construction of that road for and on account of which such lands are hereby granted, and shall be disposed of only as the work progresses, and the same shall be applied to no other purpose whatsoever: *And provided further*, that any and all lands heretofore reserved to the United States by any act of Congress or in any other manner by competent authority, for the purpose of aiding in any object of internal improvement or for any other purposes whatsoever, be, and the same are hereby reserved to the United States from the operation of this act, except so far as it may

be found necessary to locate the routes of said railroads through such reserved lands; in which case the right of way only shall be granted, subject to the approval of the President of the United States.

The second—That the sections and parts of sections of land, which, by such grant, shall remain to the United States within six miles on each side of said roads, shall not be sold for less than double the minimum price of the public lands when sold; nor shall any of said lands become subject to private entry until the same have been first offered at public sale at the increased price.

The third—that the said lands hereby granted to the said State shall be subject to the disposal of the Legislature thereof for the purposes aforesaid, and no other; and the said railroads shall be and remain public highways for the use of the government of the United States, free from toll or other charge upon the transportation of any property or troops of the United States.

The fourth—That the lands hereby granted to said State shall be disposed of by said State only in manner following: that is to say, that a quantity of land, not exceeding one hundred and twenty sections for each of said roads, and included within a continuous length of twenty miles of each of said roads, may be sold; and when the Governor of said State shall certify to the Secretary of the Interior that any twenty continuous miles of any of said roads is completed, then another quantity of land hereby granted, not to exceed one hundred and twenty sections for each of said roads having twenty continuous miles completed as aforesaid, and included within a continuous length of twenty miles of each of such roads, may be sold; and so, from time to time, until said roads are completed; and if any of said roads are not completed within ten years no further sale shall be made, and the lands unsold shall revert to the United States.

The fifth—That the United States mail shall be transported over said roads, under the direction of the Post Office Department, at such price as Congress may by law direct: *Provided*, That until such price is fixed by law, the Postmaster General shall have the power to determine the same.

A SUBSTITUTE FOR HEMP.—Jean Blanc, a resident of New Orleans, has recently taken out a patent for making hemp or a material of that description, out of the fibrous bark of the cotton plant. The product of Blanc's discovery is very similar to ordinary hemp in strength and appearance, and will doubtless serve like purposes in manufacturing. If it be true, as asserted, that an acre of cotton will produce fifteen hundred pounds of hemp, without in the slightest degree diminishing the amount or value of the cotton crop, then the importance of the discovery cannot be easily over-estimated. Heretofore, the stalk of the cotton plant has been considered worse than useless, and to get rid of it has been a source of annoyance to the planter. Convince him now that the stalk is almost as valuable as the cotton which it bears, and afford him an opportunity of trying the experiment for himself, and of testing the value of the discovery in question, and if he can, at a comparatively trifling cost, obtain fifteen hundred pounds of clean hemp per acre from his fields, he will certainly be under great obligations to the unpretending Mr. Blanc, who has favored him with a valuable idea.

The cotton stalk hemp, we have seen, or at least specimens thereof, and it is as we have

already described it. The stalk we understand, has to be prepared by a short rotting process. It must then be crushed between two heavy iron rollers, similar to those used in extracting the juice from cane, and by this operation the brittle woody part of the plant is broken, so that by a slight shake the wood is separated from the thread-like fibres of the bark.

The discoverer of this process alleges that in preparing the cotton stalk, previous to breaking it between the rollers, all the green cotton balls become ripened, and that thereby the yield in cotton is increased to the extent of a bale per acre.—*Com. Review.*

From the Austin State Gazette.

## THE CONDITION OF TEXAS.

We have before us the able report of the Comptroller. We avail ourselves of some of its valuable data, and shall endeavor in a few numbers to present to our readers some, we trust, interesting views of our social and political condition.

During the last four years the assessed acres of land have increased eight millions of acres, or at the rate of *two millions of acres per year*, while the value of said land has been increased *twenty-five millions of dollars!* or at the rate of *six and a quarter millions of dollars per year!*

We have examined the reports of several States of the Union, and we are at liberty to say that this is an astonishing increase, and vastly beyond the rates of lands assessed in any Southern State.

The average value of land per acre, which in 1852 was only 87½ cents, is now \$1 28.

The number of negroes assessed have increased in the last four years *twenty-seven thousand*, and a value equal to *twenty-three millions of dollars* added to the slave capital of the State.

We turn to the census, and find that in 1850 there were only fifty thousand slaves in the State. Here then in five years we have more than doubled our slave population. Can any State of the Union show a similar condition of things? Not one.

During the ten years preceding 1850, our slave population increased 18 per cent. Arkansas increased 136 per cent.; Missouri 50 per cent.; Mississippi 58 per cent.; Florida 52 per cent.; Louisiana 45 per cent.; Alabama 35 per cent.; Georgia 35 per cent.; Tennessee 30 per cent.; and in all the other slave States the increase was less than 20 per cent! In the past five years we have surpassed all our sister States. We exhibit an increase in our slave population of *one hundred and forty-two per cent. over the increase of Mississippi, as shown by the last census!* and after our own State and Arkansas, Mississippi then showed a greater increase than any other southern State.

While our horses and cattle have not increased much over 600,000, their value has increased *nine millions of dollars!* In 1853 the average assessed value per head was \$7 82, now it is \$10 48.

The increase in the value of other property, such as town lots, money at interest, &c., has gone up from eleven millions of dollars in 1852 to twenty millions of dollars in 1855.

Did we not have the facts and figures under the official seal of the proper officer, we might well consider the statement a fancy sketch, but such are the plain facts of the prosperity of our great and growing State.



The facts we here state may be more clearly seen in the following table:

| Years. | The following table shows the chief articles subject to taxation, with their value, for each of the last four years: |              |                |            |              |                |                    |             |                |              |
|--------|--|--------------|----------------|------------|--------------|----------------|--------------------|-------------|----------------|--------------|
|        | LAND.  |              |                | NEGROES.   |              |                | HORSES AND CATTLE. |             |                | OTH. PROP.   |
|        | No. Acres Assessed.  | Value.       | Val. per Acre. | No. Ass'd. | Value.       | Value of each. | No. Ass'd.         | Value.      | Val. per Head. | Value.       |
| 1852   | 37,438,792   | \$33,116,772 | \$ 87 1/2      | 68,795     | \$29,638,990 | \$416          | 1,020,632          | \$7,977,999 | \$7 82         | \$11,030,423 |
| 1853   | 39,175,848   | 39,256,612   | 1 00           | 78,713     | 35,946,473   | 466            | 1,164,463          | 10,217,490  | 8 78           | 13,734,530   |
| 1854   | 44,550,946   | 49,951,177   | 1 12           | 90,612     | 46,501,840   | 513            | 1,377,472          | 13,465,805  | 9 08           | 17,053,795   |
| 1855   | 45,893,869   | 53,671,136   | 1 23           | 105,603    | 53,373,934   | 505            | 1,616,009          | 16,936,423  | 10 48          | 20,339,972   |

The total value of all items of taxation in the above for the same year was—

|   | Total value property for 1852, \$90,754,094 | 16 1/2 % | of each year. |
|---|---|----------|---------------|
| "   | 1853, 99,155,114                            | 23 "     |               |
| "   | 1854, 126,981,617                           | 28 "     |               |
| "   | 1855, 149,521,451                           | 17 1/2 % |               |
| Average increase per cent. for 1852 to 1855, 21 per cent. |   |          |               |

We have increased in the respective value of our lands, negroes, horses and cattle, and other property, as follows:

| Increased value of Slave property since 1852, \$21,744,334 |            |  |
|--|------------|--|
| " " Land " " "   | 25,551,354 |  |
| " " Horses & Cattle " "                                    | 8,958,424  |  |
| " " Other property " "                                     | 9,509,535  |  |
| \$68,767,267   |            |  |

We have thus shown that the increased value of our property in the State, upon which assessment is made, is nearly *sixty-nine millions of dollars*, and that it has made this astonishing increase in the last four years!

In another year, making half a decade from 1855, the value of the whole taxable property in the State will have doubled since 1852.

While we congratulate the State on this favorable state of things, under a Democratic administration of affairs—a state of things which will make a favorable showing with the most rapidly populating States of the Union—we hope it will arrest the attention of the people of other States, and prove to them that in the lands of the State of Texas is now to be found the best investment of any in the

Union. We present no exaggerated picture, and our own people will be satisfied that with some exertion on the part of the State in aid of railroads, we shall in a few years find ourselves with such an increased capital and population as to be able to carry on those great works of improvement on a scale commensurate with our wants. What we now want are some well-devised general trunk roads, and private enterprise, with timely State aid, will accomplish it with entire security to the funds of the State.

We are really not aware of the swift progress we are making in all the elements of wealth. With but half the resources five years ago, railroads and other great improvements were evidently matters of doubt and distrust. Now the demands of commerce require and will command from capitalists what not even prodigal bonuses of land have influenced in our behalf.

In our next we shall give some important facts demonstrating still more clearly our ability to undertake the making of some two or three main trunk railroads in Texas.

[From the San Diego Herald.]

#### PACIFIC AND ATLANTIC RAILROAD.

It is truly gratifying to notice the zeal exhibited by our Atlantic brethren for the purpose of inducing Congress to speedily act on the great question of a Pacific Railroad. Surely if Congress ever intends to aid in this great project, it must heed the voice of the people, and during the present session efficiently act on this truly National question.

Some weeks ago we received by mail a copy of "A Supplement to the Railroad Record, of Feb. 11, 1856," published at Cincinnati, Ohio, and especially devoted to the subject of a Pacific Railroad. With this Supplement came a printed petition, asking Congress to make an appropriation for the speedy construction of a Railroad to the Pacific. This petition is being circulated in every State in the Union, and our people will all sign and join their voices with those of their brethren, which is now swelling to a trumpet's note, not to be mistaken or disregarded.

With a view to show the universality of the sentiment of the American people in favor of the Road, we make a few extracts from this Supplement:

"We commence to-day the publication of a weekly issue devoted to the great question of a Pacific Railroad. It may be asked, and not without cause, why thus intrude ourselves in this unusual manner before the country. We answer, for our country's welfare. The time has now arrived when it is imperative on the government to provide some means for more intimately uniting with us our brethren on the Pacific; that those of our friends who leave us to-day for their home at the setting sun, may not be compelled to traverse both oceans, expose themselves to the malignant atmosphere of a Panama channel, and spend a month of valuable time before they reach their destination. That the government will provide us some better means of conducting our commercial affairs between the States of the Atlantic, the great center, and the far off Pacific. That the government shall take such prudential measures of safety and defence for our country, as shall deter our enemies, and make us feel secure in our homes. The powerful states of Europe, with their myriads of steamers traversing every sea, can now pounce on our defenceless western coast, and burn and pillage to their hearts' content before we could send a single regiment to their relief. They can intercept our treasures as they pass from sea to sea, and destroy our commerce. But let Congress do its duty—give us a railroad to the

Pacific, on our own soil, and in as little time as it would take to land an offensive army, another of superior numbers, of more daring courage, and equally skilled in arms, could be there to repel the intruders from our homes.

This is not all. The country demands it. Congress is but the servant of the people and is expected to meet their wishes. The public domain is entrusted to their keeping for the public use and public good; not merely as a source of revenue to an overflowing treasury, but as a means of advancing the interests of the nation, of elevating the masses and strengthening our commercial, social, fraternal and political relations."

[From the Pennsylvania Mining Register.]

#### RAILROAD TO THE PACIFIC OCEAN.

Under date February 27, 1855, the Hon. Jefferson Davis, Secretary of War, laid before Congress, with his own report, reports of the explorations and surveys made under the orders of the War Department, for a railroad from the Mississippi river to the Pacific ocean. These reports received by the Secretary of War through A. A. Humphreys, Captain Topographical Engineers, with a report from that officer dated February 5, 1855, were printed by order of Congress. The routes explored were:

Route of forty-seventh and forty-ninth parallel of latitude, from surveys under Governor I. I. Stevens, in 1852-4.

Route of forty-first and forty-second parallels of latitude, from surveys of Lieut. E. G. Beckwith Third Artillery, 1852, Brevet Captain J. C. Fremont, Topographical Engineers, in 1842-4, and Captain Stansbury, in 1849.

Route of thirty-eighth and thirty-ninth parallels of latitude, from surveys under Captain Gunnison, Topographical Engineers, and Lieut. E. G. Beckwith, Third Artillery, in 1853.

Route of thirty-fifth parallel of latitude, surveyed by Lieut. Whipple, Topographical Engineers, in 1853.

Route of thirty-second parallel of latitude, surveyed by Capt. J. Pope, Topographical Engineers, from Preston to Dona Ana, 1853; Lieut. Parke, Topographical Engineers, from Dona Ana to Pimas Villages, 1853; Major Emory, Topographical Engineers, from Pimas Villages to mouth of Gila, 1848; Lieut. Williamson, Topographical Engineers, in California 1853.

Also, notes from Dr. Wislizenus's report on the Cimarron route from Independence, Missouri, to Santa Fe, New Mexico; and from the reports of Col. Johnson, Topographical Engineers, Lieut. W. F. Smith, Topographical Engineers, Capt S. G. French, U. S. Artillery, and others, of the route from San Antonio to El Paso.

If the reader will trace these routes upon a good map of the United States, he will better understand their relative bearings and positions. His eye may then follow the path of the engineer, in the track of the compass through the wilds of the Rocky Mountains.

That much information was elicited by these explorations is unquestionable; but the construction of a railroad to the Pacific ocean is a stupendous undertaking, and before any through route can be definitively fixed upon the best ground, many more explorations and surveys will be made.

The second Report of Captain A. A. Humphreys to the Secretary of War, which we give in full to our readers, exhibits revisions and improvements resulting from additional



explorations of the route from Fort Smith, Arkansas, to the Pacific.

And so it will be with other routes. The Alleghany mountain range, stretching along parallel with the Atlantic ocean, and interposing its summit between the Atlantic cities and populous inland States, yet supplies a field for discovery to the engineer, although more than a generation of the profession have passed from the earth since the first explorations and surveys were made across it.

From the Atlantic the march of population was to the Alleghany mountain and then beyond it. Communities prospered at its base on both sides; the interests of commerce grew apace with the population; the mountain barrier to a convenient and rapid communication was explored over and over again, and at last surmounted by two locomotive roads—one leading out from Philadelphia, the other from Baltimore.

With the Rocky mountain range the case is different. Civilization has not yet reached its base on either side. A wilderness is along it and upon its sides. To explore its passes and ravines is a work of hardship not untended with danger. There are no pioneer woodsmen to direct the son of science to depressions in the crest line. Everything must be discovered; and the field being both large and intricate, progress may be sure but not rapid. The work, however, must be done, and will be done, under the auspices of the general government.

The expression of public sentiment is in favor of a railroad to the Pacific, within the national limits, and by the shortest and best route. Perchance the way to consummate the scheme, may be, to build a railroad towards the mountains, and then unite the east and west divisions, for a time, by a broad wagon road across the mountains, taking care so to locate the middle division that when an iron trackway shall be required in that division, it may be put down.

A work so imposing in its outline, sketching in its profile the features of a vast country, should command the concentrated influence of the American people. To insure success, however, there must be union and co-operation *on one line* through the mountain region. Let not the policy which projected and prosecuted rival trunk lines toward the Mississippi at the same time, to mutual disadvantage, be continued, indefinitely, beyond the Mississippi. If rival through lines be carried, prematurely, third way to the Pacific ocean and there pause, what shall succor them? The nation wants one route *for State reasons*, and can divide the use of it with commerce. When that one route shall cease to accommodate the wants and the interests of commerce, a second and a third road may be built. But that time seems afar off!

#### THE GALVESTON & RED RIVER R. R.

Our road is progressing slowly but surely, and it is now commencing to pay something, and the daily expenses upon the Company will be greatly lightened. The road is now carrying the passengers and mail out as far as Cole's, and also a good deal of cotton and merchandise. Last week they some days brought in as many as sixty bales of cotton at a trip. As soon as the road is completed twenty-five miles it will pay a handsome profit over the expenses. Two weeks ago the receipt of cotton at Houston reached as high as 800 bales in one day, and at least six hundred of the eight came along this line;

the freight upon this at fifty cents per bale, would have been \$300. The net receipts on this road, as soon as completed twenty-five miles, cannot be less than seventy-five or one hundred thousand dollars per annum. This is bound to be the great trunk road from which all the other roads running East and West must diverge. If a road was commenced upon this trunk fifty miles from Houston, say in Grimes county, and run directly through Huntsville, and Houston, Cherokee and the other Eastern counties, it would save the expense of constructing at least one hundred miles of road to reach Galveston. And again, any person by taking a map of the State will see that the same point would be the most central point from which to run another road into the North-Western portion of the State, while the main trunk, running up between the Brazos and Trinity, would afford that entire section of country all the facilities that could be required. And thus one trunk could be made to answer the purpose of three roads, and whenever the wants of the people require it, could be easily extended to Galveston. But whether these diverging roads are ever built or not, this trunk running as it does through the very heart of the central and most productive portion of the State, must be one of the best paying roads in the South.

[From the Houston Telegraph.]

#### THE NEW YORK AND BOSTON MERCHANTS.

Mr. Groesbeck, who has just returned from New-York, gives the most flattering account of the feelings of the merchants of that city and Boston, towards our Railroad. Indeed, he brings unmistakable evidence of that good feeling in the way of substantial aid to our railroad enterprise. Mr. Groesbeck has furnished us with a list, which we to-day publish, showing that the merchants of New-York and Boston, have actually subscribed over \$120,000 in our roads, which they are paying as fast as the iron and other materials are shipped; and he informs us that many of them have expressed their determination to double that subscription, as the road progresses. We cannot refrain from expressing our admiration of their liberality, and our gratitude for the confidence they repose in our road in thus coming forward and lending a helping hand in its early infancy.

They have shown themselves to be the true friends of Texas and the South. They know well that the North is deeply interested in the agricultural and commercial prosperity of Texas, and they have shown wisdom, as well as liberality, in thus manifesting their good feeling towards us, in the way of substantial aid. We sincerely hope that the merchants of Texas, and especially of our own prosperous city, will show their appreciation of such liberality, by hunting out these generous-hearted men, when they go North to purchase goods, and that they will continue to cultivate with them those friendly relations which their mutual interests require of them. As an evidence of our kind feelings towards them, we intend to keep their names and places of business, with the amounts contributed by them, standing in our columns, for the information of all those interested in knowing who are the true friends of the commercial interests of Houston and Texas. And we cannot refrain from expressing the hope that other merchants of the North, who we know to be deeply interested in the trade of Texas,

will come forward and contribute liberally to our railroad improvements.

The merchants and farmers of Texas themselves are scarcely more deeply interested in the railroad improvements of Texas, than the New York and Boston merchants. The entire cotton crop of Texas, besides other articles of trade, is shipped every year to one of these places, and goods and merchandise exchanged in return. Indeed, Texas keeps in advance of the Northern merchants, and constantly in their debt. And yet for the want of railroad transportation, the cotton crops lie almost twelve months upon the farms, during which time the Northern merchants are lying out of their money. Nothing is so essential to a healthy state of commerce as prompt and quick communication between the localities interested. For the want of such facilities a merchant in the interior of Texas may become insolvent, and make way with every dollar of his property, or die, and his estate be administered or closed, before his creditors in the North receive information that their claims are even in jeopardy. But give us railroads, and place the great heart of the interior of the country into immediate and regular connection with New York and Boston, and our word for it, the farmers and merchants of Texas will be more punctual and more prosperous, and the merchants of New York and Boston will reap more speedily the fruits of their labor in selling to both.

[From the Bankers' Magazine.]

#### NEW SOURCE OF NATIONAL WEALTH.

The mineral wealth of this country exceeds that of any country in the world; and in future years we must look to the employment of their products as essential sources of national wealth. Great stress has been for years laid upon the value and the prospective importance of the California gold mines; so much so, indeed, that other sources of wealth, of more essential utility, have been in a measure lost sight of. We allude to the coal and iron products of the country, which, if properly developed and encouraged, would furnish employment to thousands of additional operatives. Coal requires no legislative protection. We need fear no competition from foreign quarters, and so profitable or so valuable have these mines become, and their prospective value is so great, that capital will flow in from various sources for their further development. Nature has lavishly provided a road bed of the best order from the anthracite coal mines of Pennsylvania to tide-water, whereby three million tons of coal may be transported annually one hundred miles, with the aid of a small motive power. This is exhibited in the business operations of the Reading R. R. Co. This road has a gradual descent from the mines to the tide-water, so that one engine has the power of transporting no less than four hundred and thirty-seven tons of coal at one time.

Important changes are being made in the facilities for transporting coal from the interior of Pennsylvania to places where it now is, and for years will be wanted. One important link is the construction of the Northern Central Railroad from the Susquehanna river towards Baltimore. A road is also authorized from Reading to Allentown, Pennsylvania, destined to form, at an early day, a part of the shortest line from New York to Pittsburg, and thence to other portions of Western Pennsylvania, and to Eastern Ohio. Railroads are also in progress in Kentucky



which will in a few years serve to develop the extraordinary wealth of that State in its coal and iron mines. Other States also evince more attention to and appreciation of their great resources in those minerals. For instance, Missouri has an *Iron Mountain* of its own, capable of furnishing the raw material in sufficient quantities for the whole world if needed. Virginia, North Carolina, Pennsylvania, and the northern portions of Maryland, also abound in iron, the value of which, for the construction of railroads, and for other purposes, cannot be too highly estimated.

It is well for us, as a people, to bear in mind these liberal provisions of nature, because they will ere long assume a primary (not a secondary) importance in the commercial and manufacturing features of the country; because we are contributing millions annually to Europe for supplies of iron, when we have them at our own doors; and finally, because great changes are going on in Europe and Asia, which will shortly render necessary more attention here to this important source of wealth. According to the recent official documents before us, it would appear that a vast system of railroads is now in contemplation in Eastern Europe, and in various portions of India, which in itself will require all the iron that England can produce for twenty years to come. Russia has suffered in the recent war, for the want of a continuous line of railroads from St. Petersburg on the north to the shores of the Black Sea on the south. If these essential aids to a nation, in its defences, had been liberally possessed by Russia, she could have accomplished more in her late contest with the Allies. This desideratum will be in a few years supplied. Her government is an enlightened one, and has adopted such measures as will secure a complete series of railroads, adapted to the commercial wants of her people, and to the exigencies of future war.

It may be truly said that the most extraordinary change, in the matter of railroads, now going on in the world, is the construction of extensive lines in India. On the 3d of February, 1855, the opening of the Indian Railway was celebrated, showing that European capitalists and merchants find a wide field in India for the more profitable employment of money, and for the extension of commercial interests, the introduction of new articles of commerce, and the wider diffusion and extension of British and Continental manufactures. The commercial interests of the United States will participate in the permanent benefits arising from this extended circle of civilization, and from the introduction of useful articles produced in this country, and which will gradually find their way among the people of the East.

According to a recent debate in the British Parliament, it appears that the East-India Railway was sanctioned as far as Delhi, 900 miles, and contracted for as far as Allahabad, 590 miles, and was to be completed by the end of the year 1856. It was opened as far as Raneegunge, 56 miles from the Calcutta and Delhi line, near Burdwan, and distant from Calcutta 125 miles. The works on the line from Calcutta to Rajmahal, on the Ganges, were in a very forward state as far as the More river, a distance of 60 miles from the Raneegunge and Burdwan junction. The rate of interest guaranteed by the East India Company upon £4,000,000 capital is 5 per cent. The Great Indian Peninsula Railway (North-eastern Extension) was authorized to Shawpore, on the Thul-Ghaut road; it was opened

to Callian, 35 miles from Bombay, and contracted for and ready for opening as far as Wasindree, about 12 miles beyond Callian. The South-eastern Extension, which was to diverge from Callian, was sanctioned to Poonah, 85 miles, and contracted for to Campoolie, at the foot of the Bhore-Ghaut. The rate of interest guaranteed was 5 per cent. on a £1,000,000 of capital. No part of the Madras Railroad was yet opened, but the line from Madras which was to diverge to the Northwest of Bellary, in the direction of Bombay, was surveyed and partly set out. The line from Madras to the Southwest was set out in its whole extent to Beypore, on the Western or Malabar coast. It was difficult to ascertain the precise state of the works, as they were in the course of construction by the railway engineers themselves, but Major Pears says that the line to the Western coast would be open for traffic at the close of the present year. The first part of the works on the line towards Bombay was also in a forward state: the rate of interest guaranteed was  $4\frac{1}{2}$  per cent. on £500,000, 5 per cent. on £500,000 more, and  $4\frac{3}{4}$  per cent. on £1,000,000. The Scinde Railway was sanctioned from the harbor of Currachee to the Indus, at or near to Jurruck, a distance of 110 miles. The company was at present engaged in collecting the capital, and prosecuting the necessary surveys. The rate of interest guaranteed was 5 per cent. on £500,000. The Baroda and Central India Railway was sanctioned from Surat to Baroda, and thence to Ahamedabad, a distance of 163 miles.

The report of the Directors of the Great Indian Peninsular Railway, October, 1855, shows that much has been already accomplished with the aid of the East India Company, who have formally sanctioned a further extension of the Southeastern line from Poonah to Sholapoor, 165 miles. The plans for this extension are executed, the line is staked out, and the works would be let in the course of a few weeks. This line will open up the productive cotton districts of Sholapoor, and when completed will accomplish one of the great objects undertaken by the establishment of the Company. The other still more prominent object of the Company is the line surveyed through the Berar cotton fields, across the peninsula on the Northwest, to join the East India Railway, in the valley of the Ganges. Toward the accomplishment of this latter object, a further portion of the railway has been opened within the present month, namely, from Callian to Shawpore, seventeen miles in length. This makes 51 miles of railway now in operation. The works in the hands of the contractors are for 37 miles, between Callian and the foot of the Bhore-Ghaut. Two other contracts have recently been let, one comprising the ascent of the Bhore-Ghaut to Poonah—total under contract, 91 miles. The Directors state that there is every reason to believe that the lines of the Company will not exceed an average cost of £10,000 per mile, including the rolling stock. The receipts for passengers have gradually increased with the increased mileage opened for traffic, but the working expenses are comparatively heavy.

A letter from Bombay, dated Oct. 4, 1855, says:

"The portion of the Great Indian Peninsular Line from Callian to Wasind, of which I wrote in my last was opened on Monday, the 1st of this month. It is at Callian that the railway separates into two branches, the Northeastern and the Southeastern, the for-

mer ascending the Thull Ghaut, and proceeding through the rich cotton grounds of Candesh and Berar to the Ganges, the latter passing up the Bhore-Ghaut to Poonah, Sholapoor, and the great Madras line. The newly-opened portion belongs to the former, or Thull-Ghaut branch."

These several statements show that a vast revolution is now going on in the East—that it will lead to important commercial changes, in which the people of the United States must participate. It is likewise apparent that a rise will occur in the market value of iron, from the increased demand abroad, and a better time never occurred before for investments of American capital in rolling-mills, foundries and furnaces, with a view to the supply of our own market at least.

The prospects for the railroad interests of the United States were never better. The leading companies of New York, Pennsylvania, Ohio, Michigan, and Illinois, are now in the receipt of large revenues from passengers and freight. Compared with former years, their receipts are 25 to 33 per cent. greater; and for the current year, the business will no doubt be still larger. One remarkable fact in this connection may be stated, *and should be borne in mind*, namely, that many miles of railroad in Ohio and Pennsylvania, constructed of British iron, actually pass over thousands of acres covering extensive beds of iron, not yet opened, but which require only the fostering care of the government in aid of the exertions of capitalists, to develop their vast importance. In confirmation of our remarks as to the demand for iron for India, we will add the following extract from the circular of Toms & Co., London, with their annual report upon the British India trade:

"The wants of India continue to manifest themselves on a large scale, and thirty thousand tons have been negotiated this week; the price we believe to have been about £9 in London, or very nearly the same as a similar quantity was contracted for last December. The bulk will be manufactured in the North of England, and the rest in the South of Wales. France is likely, as soon as the pressure of war has passed away, to be a buyer to even a greater extent than during its existence; and she has taken no insignificant quantity of rails from us these two years past. Russia will probably be in the market for rails on a large scale shortly after peace is declared, in order to complete her lines Southward, for the war has revealed how impossible it is for her to successfully repel invasion without increased facilities for the transfer of troops and stores. Other large continental orders are spoken of as likely to come forward. The market is firm, and the last mail from the States brings orders for rails and sheets."

**LAND GRANTS FOR RAILROADS**—The liberal disposition displayed by the present national House of Representatives in favor of land grants for railroad purposes, will immortalise the Thirty-Fourth Congress, even if it do no other great act of public benefit. We were not expecting to find a majority of fifteen to twenty in favor of this policy in the House, though we knew at the outset that the narrow Southern views of the last Congress upon this question could not rule so thoroughly in the present House.

The precedent set in the grant to Iowa will, we think, be very apt to be followed in other respects during the Session. A bill has already been introduced for a grant to Min-



nesota, the provisions of which, however, we are not as yet advised. Wisconsin we presume, will also come in for her share.

We could never see any cause for refusing to adopt this policy, both as a great advantage and benefit to the people of the new States and Territories as well as to the General Government itself; and we rejoice that Congress has at length awakened to a true sense of its duty in the premises.—*Weekly Minnesotian*.

From the Cincinnati Daily Columbian.

#### THE PACIFIC RAILROAD.

At the close of the late Democratic Convention, a resolution was passed in favor of the Pacific Railroad. This may be taken as indicative of public sentiment on this subject, as it is within the Democratic party principally, that any opposition to it arises. This resolution was strongly opposed by the Virginia delegation, and generally by those who are afraid that the general government should do anything useful for the people. That school, however, is no longer a living power; and though Virginia still lives in the dark ages, and the Convention out of courtesy, declared its adherence to the resolution of 1798 (!) yet in *practical* all that stuff is abandoned. The Convention passed the resolution because their constituents were for it. The other parties in the country contains few opposed to this movement, for they are most largely composed of business men, who understand the great need of such a work to the commercial interests of the nation. Public sentiment is strongly in favor of the Pacific Road. This is much strengthened by the several outrages at Panama, in Nicaragua, which shows that we can have no safe route to the Pacific but through our own territory. This is enough in itself to determine this question; but there is another reason of vast importance to our future trade, and national importance. This is, that the overland route is four thousand miles nearer. This fact will, in some future time—when the Pacific Railroad is made—carry the commerce of both America and Europe over the inland route. Paris and London will trade with Asia through America. It will be the shortest, cheapest, best route. In fine, this great road is both a moral and commercial necessity of the country.

But, *how* is it to be made? From the first we have foreseen that Congress would not consent to make the Pacific Road a Government work. They might do so as a mere military road. But politicians are afraid of every thing to which some political dog in the manger might object. They are more afraid of one negative vote than of ten positive ones. But while this is the fact, they can generally contrive to do indirectly what the public good requires, although afraid of direct means. Thus, in the case of railroads, they have aided them in all cases where they pass through the public lands, on the ground of proprietary interests. So, in the case of the Pacific Railroad, a plan has been concocted, which it is generally agreed, may be adopted. It is to make land grants to the main lines leading West, through Iowa and Missouri, which will enable them to meet at a common point near Fort Kearney, and thence (wholly through Government Territory) a large grant for the completion of a trunk line to San Francisco. This will unite and harmonize Northern interests.

For the Southern route (which in many respects is the best), on the line of 32 deg., a grant will be made to complete the line of the Texas Western Railroad from El Paso to San

Diego; to which will be added some additional aid to the Texas Company.

This we understand to be the outline of a plan substantially agreed upon. It has some decided advantages. It harmonizes various interests, and enables a road to be made on each of two great routes, whose respective friends claim the superiority. It will create just as much competition as is necessary to a healthy development of the whole subject.

It is well ascertained that the Texas road can be made the cheapest, and it is equally certain that the mildness of the climate will cause it to be the easiest and shortest. Some persons in the North may be prejudiced against it, but not when they thoroughly examine the question. From any point on the line of the Cincinnati, Columbus and Cleveland road, it will be shorter and easier to reach the Pacific by Cairo, Fulton and El Paso, than it will be to reach it by the Platte route, or any practicable Northern way. This, taken in connection with the mildness of the climate, are reasons of great force in favor of the Texas route. From the Northern States, generally, it will be quite as short to go to San Diego, as it will be to go on any line that can be made to San Francisco.

This fact has not been generally known but is one of sufficient importance to have great weight in the consideration of this subject. The point of centralization for a movement by the way of the Texas route, will for the Ohio Valley be at Cincinnati. The roads from the Lakes, and from Pittsburg and Wheeling, will concentrate both persons and freight here to be carried over the Ohio and Mississippi Railroad to Cairo, and thence to Fulton, over the Texas route to the Pacific. The Lake Basin will throw its Pacific trade, by the Council Bluffs route to San Francisco. The whole system of Northern and Southern Railroads will be connected with the great Railroad routes to the Pacific Ocean. No one will think of going by Panama, any more than they will come by Greenland, from Europe to the United States.

When this great highway is completed, and Europe begins to send its people and goods through America to Asia, a new era will have arisen to commerce. Even Australia will carry on her commerce through the United States, and we shall hold the central position of the world, and the key to universal commerce.

A good prize, like this, is worth striving for, and it will hardly pay to substitute the idle janglings of politicians for this magnificent enterprise, greater than was ever achieved by the most brilliant conquests of the most powerful nation. Let Congress do *something*, and let that something be effectual. We have great events before us, let us not spoil our destiny.

[From the Shelby Democrat, May 30]

#### IOWA LAND BILL.

The following is a synopsis of the Bill granting one and a half million acres of land to the State of Iowa, for Railroad purposes. The Bill has received the President's signature and is now a law.

1st. The Railroads are to start as follows: From Burlington on the Mississippi, to a point on the Missouri near the Platte River. The second one from the city of Davenport, via Iowa City, Fort des Moines, to Council Bluffs. The third one from Lyons City, north westerly to a point of intersection with the Main Line of the Iowa Central air line Railroad, near Maquoketa, thence on said

Main line running as near as practicable to the forty-second parallel across the said State to the Missouri River. Fourthly, from the city of Dubuque to a point on the Missouri river, near Sioux city.

2nd. The lands granted to the State of Iowa, shall consist of alternate sections, and to extend six miles in each direction from said roads, save and excepting such lands as have heretofore been sold by the United States or taken up by pre-emption when in such case the lands in lieu thereof may be taken nearest said road though not at a distance exceeding fifteen miles.

3d. The lands appropriated shall be exclusively applied to the building of said roads, and shall be disposed of only as fast as the work on them progresses.

4th. All lands within six miles of any of said roads belonging to the United States, shall not be sold at less than double their minimum price, that is to say, not less than two dollars and fifty cents per acre, nor shall any of said lands be subject to private entry until it may first have been offered at public sale.

5th. Said lands are granted to said State for the purpose of building said roads and for no other purpose. Said roads shall be used by the United States for carrying property or troops of the United States, without toll or any other charge.

6th. The lands so conveyed to the State shall be disposed of in this manner. A quantity of land not exceeding one hundred and twenty sections for each of said roads, and included within twenty continuous miles, may be sold and then twenty miles of the road must be completed before any more can be sold, and so on until all be finished. However, if any portion of said lands shall be unsold at the expiration of ten years the same shall revert to the United States.

7th. That the United States mail shall be transported over said roads, under the direction of the Post Office department, at such price as Congress may by law direct; provided, that until such price is fixed by law, the Postmaster General shall have power to determine the same.

[From the Shreveport Democrat.]

#### TEXAS WESTERN RAILROAD COMPANY.

No Railroad in the United States ever encountered difficulties of a more serious character, than has the company named at the head of this article. From the very beginning it has been assailed by open as well as secret foes; it has been looked upon as a "moonshine company," as a band of pennyless adventurers, banded together for the purpose of defrauding the State of Texas. This opposition has grown out of a variety of circumstances which may be reduced to a few simple and very intelligible points.

1st. Rival railroad interest. It is well known that there is a talented, if not a very large party in Texas that favor the plan of concentrating all the roads in the State at Galveston, and some other points on the gulf. The most widely circulated, as well as probably the best conducted journals in the State, favor this plan. Mr. Sullivan's bill presented to the legislature at its session last winter, contains the whole programme, and it has lately been mapped out and published in the papers of Galveston. The advocates of this plan favor what is called the State plan of building roads.

But this is not all; the advocates of rival



Pacific roads have seized upon every pretext to prejudice the claims of this enterprise. As the work itself is one of great merit they have endeavored to create a prejudice against the men who have been prominent in pushing it forward.

2d. The failure to secure the Pacific, a 20 section charter, gave the enemies of this enterprise arguments that they did not fail to use against the company. The cry of humbuggery was raised in every quarter, and for the time the voice of reason and common sense was completely drowned by the clamor.

3d. The war in Europe, by giving a new direction to capital for the time, necessarily lessened the amount for investment in railroad securities. The Texas Company found it impossible to effect a lone, though prepared to offer the most perfect guarantee. The cause effected other railroad enterprises in the West, and even in many instances, caused an entire suspension of the work.

4th. It cannot be denied that some blunders were committed in the first instances, and it would be strange if they had not. In settling the preliminaries of a great work some error of course was to be expected; some men, too, would creep into the company for no other purpose than to promote their own private speculations. Such things are incident to all enterprises, especially such as offer great inducements to men of small means, as is the case with this enterprise.

With regard to the men who are engaged in the Texas Western Railroad, we can speak from our own knowledge. Some of them, of course, are men of limited means, but the larger majority are planters, scattered through different States of the Union, most of them established men of large means. There is not in the United States a more substantial company, one with larger aggregate means, or one more honestly disposed to put their shoulders to the wheels, and to press forward the great work. Many of the company are worth from \$100,000 to \$500,000, and but few, very few, can be found who are not amply able to pay for every dollar worth which they may have taken.

The men who are best known in connection with the work were never supposed to be visionary or any way unworthy of public trust, until the discovery was made by the enemies of the great work. Mr. Walker, as a Senator in Congress and as Secretary of the Treasury, was looked upon, not only here but in Europe, as one of the most thoroughly practical men of the age. His reports, while Secretary of the Treasury, will stand as a monument to his genius through all distant times, when the names of his detractors will have been completely lost and forgotten.

The Hon. T. Butler King has proven himself to be a man of sound sense and practical wisdom. He was one of the earliest and most efficient advocates of the railroad system of Georgia. His report on California first opened the eyes of the country, to the importance of that country and the vast stores of mineral wealth which it contains.

While a member of Congress he gave birth to many ideas which have since been practised. He may be regarded as the father of the ocean mail steamship line, and if he had not retired from that body, would, before this time, have had a line of steamships running between San Francisco and Shanghai.

He is a man of the right mould for the age—full of enterprise, energy, perseverance, devoted to progress, and with enlarged and

liberal views upon all subjects. Such a man is above the reach of the grovelling intellects who have assailed him.

Ex-Governor Dimond, the President of the company, has long enjoyed the confidence of his State and country. He was elevated to the highest office in the gift of his State, was our consul at Vera Cruz, and collector during the Mexican war, and in all situations was regarded as an able and faithful public servant. He is a man of means, and enjoys a high degree of credit in the moneyed circles of the North.

Col. Charles S. Todd, of Kentucky, whose time is exclusively occupied with this great work, is well and favorably known in every part of the United States. He has served his country in several capacities—in war, in the halls of legislation, and an ambassador to Russia. These are some of the men who constitute the "Moonshine Company."

The idea that such men, at their time of life, with a clean record of thirty and even forty years behind them, should engage in a wild scheme of speculation, is most ridiculous. Such a supposition, independently of the facts of the case contravenes all the motives that ordinarily prompt men to action.

#### THE TRITON AND THE MINNOWS.

Under this head the London *Quarterly Review* has a graphic description of the Leviathan iron steamer *Great Eastern*, now building for the Eastern Steam Navigation Company, and compares this Triton of Steam with the Minnow built some thirty years ago, tracing at the same time the interminable advance of the size of steam vessels. We give a few interesting extracts:—

A closer inspection of the *Great Eastern* shows how completely the new material (iron) has necessitated new ideas with respect to construction. She runs along, or rather will—for she is not yet quite up in frame—some seven hundred feet; those portions of her yet unfinished at stem and stern show her partitions of bulkheads running nearly sixty feet in height, and standing just sixty feet apart. If we examine the outer walls of these huge partitions, we see at once that the ship has no ribs springing from a keel or back bone—none of the ordinary framework by which her bulging sides are maintained in their places; but, on closer inspection, it is found that she has a system of ribs or webs, longitudinal instead of transverse, running from stem to stern of the ship, up to eight feet above her deep water line; and riveted on each side of these thirty-two webs or ribs, which are again subdivided at convenient lengths, are plates of iron three-quarters of an inch in thickness, forming a double skin to the ship, or a dermis and epidermis. Thus her frame work forms a system of cells, which, like the Menai tube, combines the minimum of weight with the maximum of strength. A glance at the transverse midship section will show at once this portion of her structure. Hitherto it has been the practice to build iron ships in exactly the same manner, as regards its framework, as wooden ones; that is, the strength of the sides has been made gradually to lighten towards the deck, which, being of wood, can offer but slight resisting power. Thus iron ships of the old method of construction are peculiarly liable to break their backs upon the application of force, either to their two ends or to the center of their keels, just, in short, as a tube would be easily broken, one side of which was made much stronger than the other.

If we clamber up the ladders which lead to her deck, some 60 feet above the ground, we perceive that her interior presents fully as strange

a contrast to other vessels as the construction of her hull does. Ten perfectly water-tight bulkheads, placed 60 feet apart, having no openings whatever lower than the second deck, divide the ship transversely; whilst two longitudinal walls of iron, 36 feet apart, traverse 350 feet of the length of the ship. Thus the interior is divided, like the sides, into a system of cells or boxes. Besides these main divisions there are a great number of sub-compartments beneath the lowest deck, devoted to the boiler-rooms, engine-rooms, coal, and cargo, &c.; whilst some 40 or 50 feet of her stem and stern are rendered almost as rigid as so much solid iron by being divided by iron decks from bulwark to keel. Her upper deck is double, and is also composed of a system of cells formed by plates and angle irons. By this multiplication of rectilinear compartments, the ship is made almost as strong as if she were of solid iron, she is rendered as light and as indestructible, comparatively speaking, as a piece of bamboo. There is a separate principle of life in every distinct portion, and she could not well be destroyed even if broken into two or three pieces, since the fragments, like those of a divided worm, would be able to sustain an independent existence.

A better idea perhaps of the interior of the ship can be gained at the present moment than when she has progressed further towards completion. As you traverse her mighty deck, flush from stem to stern, the great compartments made by the transverse and longitudinal bulkheads, or parti-walls of iron, appear in the shape of a series of parallelograms, 60 feet in length by 36 in width; numerous doors in the walls of these yawning openings at once reveal that it is here that the hotels of the steamship will be located. If we were to take the row of houses belonging to Mivart's and drop them down one gulp, take "Farrance's" and drop it down the second, take Morley's at Charing Cross and fit into a third, and adjust the Great Western Hotel at Paddington and the Great Northern at King's Cross into apertures four and five, we should get some faint idea of the nature of the accommodation the *Great Eastern* will afford. We speak of dropping hotels down these holes, because these separate compartments will be as distinct from each other as so many different houses; each will have its splendid saloons, upper and lower, of 60 feet in length; its bedrooms or cabins, its kitchen and its bar, and the passengers will no more be able to walk from one to the other than the inhabitants of one house in Westbourne Terrace could communicate through the parti-walls with their next door neighbors. The only process by which visiting can be carried on will be by means of the upper deck or main thoroughfare of the ship. Nor are we using figures of speech when we compare the space which is contained in the new ship to the united accommodation afforded by several of the largest hotels in London. She is destined to carry 800 first-class, 2000 second-class, and 1200 third-class passengers, independently of the ship's compliment, making a total of 4000 guests. A reference to the longitudinal and transverse sections will explain her internal economy more readily than words. The series of saloons, together with the sleeping apartments, extending over 350 feet, are located in the middle instead of "aft," according to the usual arrangement. The advantage of this disposition of the hotel department must be evident to all those who have been to sea and know the advantage of a snug berth as near as possible to the center of the ship, where its transverse and longitudinal axes meet, and where of course there is no motion at all. It will be observed that the passengers are placed immediately above the boilers and engines; but the latter are completely shut off from the living freight by a strongly arched roof of iron, above which, and below the lowest iron deck, the coals will be stowed, and will prevent all



sound and vibration from penetrating to the inhabitants in the upper stories. As the engines and boiler rooms are separated from each other by bulkheads, in exactly the same manner as the saloons, a peculiar arrangement has been made to connect their machinery without interfering with their water-tight character. Two tunnels, of a sufficient size to give free passage to the engineers, are constructed fore and aft in the center of the coal bunkers, through all the great iron parti-walls. By this arrangement the steam and water pipes which give life and motion to the ship will be enabled to traverse her great divisions, just as the aorta traverses in its sheath the human diaphragm.

Let us return, however, for a few moments to the deck, in order to give the reader a clear idea of the magnitude of the structure under our feet. The exact dimensions "over all" are 692 feet. There are few persons who will thoroughly comprehend the capacity of these figures. Neither Grosvenor nor Belgrave square could take the Great Eastern in; Berkeley square could barely admit her in its long dimension, and when rigged, not at all, for her mizzen boom would project some little way up Davies street, whilst her bowsprit, if she had one, would hang a long way over the Marquis of Lansdowne's garden. In short she is the eighth of a mile in length, and her passengers will never be able to complain of being "cooped up" as four turns up and down her deck will afford them a mile's walk. Her width is equally astonishing. From side to side of her hull, she measures 83 feet, the width of Pall Mall; but across the paddleboxes her breadth is 114 feet, that is, she could just steam up Portland place, scraping with her paddles the houses on either side. With the exception of the sky-lights and openings for ventilating the lower saloons, her deck is flush fore and aft. Mr. Brunel, has, we think, wisely decided not to trust so precious a human freight and so vast an amount of valuable cargo to any single propelling power, but has supplied her with three—the screw, the paddle, and the sail. Her paddle-wheels, 56 feet in diameter, or considerably larger than the circus at Ashley's, will be propelled by four engines, the cylinders of which are 6 feet 2 inches in diameter, and the stroke 14 feet. The motive power of these will be generated by four boilers. Enormous as are these engines, having a nominal power of 1000 horses, and standing nearly 50 feet high, they will be far inferior to those devoted to the screw. These, the largest ever constructed for marine purposes, will be supplied with steam by six boilers, working a force of 1600 horses—the relative strength of the combined engines being equal to 3000 horses. The speed of the ship under steam is expected to average 20 miles an hour.

It is interesting to note the progressive advance of size in steam vessels, that has taken place within the last thirty years, which the diagram, together with the following table, will render clear to the reader:—

| Date.  | Length. | Breadth. |
|--|---------|----------|
|  | feet.   | ft. in.  |
| 1825.. <i>Enterprise</i> , built expressly to go to India .....          | 192     | 27 0     |
| 1835.. <i>Tagus</i> , for the Mediterranean .....                        | 182     | 28 0     |
| 1838.. <i>Great Western</i> , first ship for Atlantic passage .....      | 236     | 35 6     |
| 1844.. <i>Great Britain</i> , the largest iron ship then projected ..... | 322     | 51 0     |
| 1853.. <i>Himalaya</i> , iron ship for the Mediterranean .....           | 370     | 43 6     |
| 1856.. <i>Persia</i> , iron ship .....                                   | 390     | 45 0     |
| ..... <i>Eastern</i> , steamship, iron .....                             | 680     | 53 0     |

Thus the ocean-going steamer of 1856 is nearly six times the length of that of 1825, whilst the difference between their tonnage is still more in favor of the last built vessel. The augmentation has gone on in an increasing ratio, and if it is still to continue, we wonder over what space of water our Leviathan of 1870 will extend!

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance*.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, TUESDAY, JUNE 24, 1856

## RAILROAD RECORD.

E. D. MANSFIELD..... EDITOR  
W. WRIGHTSON, ASSOCIATE EDITOR.  
CINCINNATI,----- TUESDAY, JUNE 24.

### THE PACIFIC RAILROAD BEFORE THE COUNTRY.

We have already noticed the fact, that the Democratic Convention, assembled at Cincinnati, recommended Congress to do what it constitutionally could, for the Pacific Road. We have now to notice also the fact, that the Republican Convention, assembled at Philadelphia, has endorsed in strong language, the construction of that road. It may be taken, therefore, as an assured fact, that the public sentiment of the nation is in favor of the Pacific Railroad, and that Congress is not only authorized, but required to take some positive steps on this subject. What shall they be?

It seems to be pretty well settled, that a grant of lands on the one hand, and an advance payment of mileage for the transportation of mails and troops, are the only proper methods of accomplishing anything effectual. We cannot see why this plan should not be adopted, or why it should not accomplish the object. Suppose that there are two roads actually made—one by the middle or Platte route, and one by El Paso; the cost of both will not reach what many people *imagined* some years since that one road will cost. The Texas road, allowing for all contingencies, will not cost over \$70,000,000; and the other is now, we believe, reduced to about \$100,000,000. If economy could be evinced, we have no doubt both may be made for that. But, granting there is not economy, we believe *two hundred millions* will cover both branches. Suppose the Government were indirectly to furnish half of that, viz: \$100,000,000, where would be the difficulty? Suppose they give \$600 per mile for fifteen years, for transportation of the mails, and give this only when each section of 50 miles is made. That is, when 50 miles are made, and their mails and freights begin to be transported, then they pay in advance for 15 years use of that 50 miles. This is \$450,000, or \$9,000 per mile. Now, at the same time, they give 30 sections of land per mile, or 1,500 sections, or 660,000 acres, which is 13,200 acres per mile; which again at \$1.25 per acre is \$16,500 per mile. Both grants are equal to a little more than half the supposed cost of the road; and on the basis of this, there can,

doubtless, be found sufficient capital to accomplish the object.

This, we believe, is really about the plan which the friends of the measure will propose in Congress. It seems to be fully sustained by the people, and if carried out by impartial legislation, and by the hands of energetic companies, we believe will be entirely successful. Among the reasons which should prevail for the construction of a Pacific Road are the immense mining districts lying in the California Bovia. In this, we do not allude merely to gold, vast as the value of that article mined there is. We speak of the numerous important and valuable metals found there, and in such immense quantities as to render their transportation alone a great business.

1. Of *Gold*, we will say this, that after eight years of constant mining, in which about *four hundred millions of dollars* have been obtained, these mines are found to be inexhaustible. The gold lies imbedded in every mountain, stream and vale.

2. *Copper*. We have noticed heretofore, the new copper mines of Ajo, in the Gadsden Purchase. This mine is very productive, and it seems almost incredible, but is so, this copper is wagoned, all the way from the Colorado to San Diego, and thence to San Francisco; and after this expensive transportation, is yet very profitable! Although we have the rich mines of Lake Superior and of Eastern Tennessee, yet copper is still so high priced as to afford an immense profit.

3. *Silver Mines*. It is well proven, that the richest mines of silver ever discovered, were in the Mexican Province of Sonora. Of that province, of the richest mineral districts is annexed to this country, by the Gadsden Purchase. The locality of the best mines, which on account of Indian attacks, and insecure rights, were abandoned many years ago, has not been exactly ascertained, but no question is made of their existence; and there is no reasonable doubt they can be discovered. Indeed, we expect to record, within a few months, the re-discovery of the old mines, and the commencement of new ones. Our supply will, we doubt not, be obtained from these, and when it happens, our countrymen will open their eyes with astonishment.

In addition to the facts we have stated above, we may add, that *coal* is ascertained to exist in several places in the Texas Route. This is an important fact, because it will greatly aid the construction and running of the road.

Thus we see, there are both strong reasons and a clear public sentiment for the construction of the Pacific Railroad.

### THE GREAT CENTRAL ROUTES.

The course of inland trade is now undergoing a change, which twenty years hence will be much better understood, than it is now. This change is to restore to the great central routes over the mountains, the streams of inland commerce of which they were deprived, by the earlier completion of the New York routes of internal improvements. Those who are familiar with the internal trade of the United States, prior to 1820, know that the great stream of western commerce was towards Philadelphia. There was the center where western merchants congregated. After a time, Baltimore began to share in the western commerce, especially after the completion of the Cumberland road. This was the natural route, and by natural route we mean the most accessible Atlantic ports to the trade and productions of the Ohio Valley. But, then this trade to the Atlantic cities was conducted under equal circumstances. The only mode of traversing the space between the rivers and lakes of the west, was by the common turnpike roads. Pennsylvania early embarked in making roads, and thus preserved the superiority of her route to the west. But, from 1820 to 1825 there came a revolution in the mode of conveyance. New York made the Erie Canal, and, of course, gave an immense preponderance to the ease and cheapness of conveyance, as far as the lake. Ohio followed with her Canals, between the lakes and the Ohio Valley. The result was, that the western trade went to New York, and that city sprang up like the mushroom of a night. The making of the Erie Canal did more for New York than all human inventions. It was the road to wealth and grandeur. Pennsylvania and Maryland made Canals also, with the same view; and both were absolute failures, because they *were not water communications from the Atlantic to the Ohio*. The break of the Portage Railroad destroyed the efficiency of the Pennsylvania Canal; and the Baltimore Canal never crossed the mountains. Thus, New York enjoyed for thirty years, a positive monopoly of the western trade. There was no mode in which that monopoly could be broken down, but by an entirely new mode of locomotion, which should place Philadelphia and Baltimore on a level, as to the advantages of transportation.

This great motor of equality has been found, in the Railroad. This road, however, had to



go not only to Philadelphia and Baltimore, but through the entire west, to the banks of the Mississippi. At length, this has been done also, and we are now to see the effect. One of the first effects was seen here, in the shipment of great quantities of lard, bacon and other similar kinds of produce, by the way of Wheeling and Pittsburg. The next was seen, in 1855, in the fact, that, after making due allowance for short crops, the arrivals of western produce, by the Erie Canal, *d-d not increase*. The next was the obvious fact, now seen in the operation of the Erie Canal, that the shipments of western produce, by that route is *relatively decreasing*. Now, the Erie Canal is not losing the Lake trade proper; but, it is fast losing that immense trade, which came from the great Valley of the Ohio; and which, under the influence of the great Railroad lines, terminating at Philadelphia and Baltimore, must be diverted in that direction. There will be a great change, but, that change will only be found, in restoring trade to its natural channels, and in giving new outlets to the west.

That, we make no mistake in the cause, or, direction of the change going on, we give the following returns of the Pennsylvania Central and Baltimore & Ohio Railroads, which are now before us, for the month of April. The same increase has taken place in each month since the 1st February.

|                           | 1855.     | 1856      |
|---------------------------|-----------|-----------|
| Pennsylvania Central..... | \$255,349 | \$510,969 |
| Baltimore and Ohio.....   | 336,711   | 512,250   |
| Aggregates.....           | 692,060   | 1,123,219 |

The receipts of the Pennsylvania Central Road for 1856 will probably reach nearly *six millions*, which, considering its length and cost, will exceed anything in the way of Railroad receipts heretofore exhibited in the United States. The Baltimore Road, though it will not equal that of the Pennsylvania Road, will show much larger results than we have yet seen.

While we are thus pointing out a great commercial change, now going on, we may as well reply to one thing, so often said as to be believed. This is, that railroads have not the *capacity* of canals. If the railroads have *double tracks*, well laid, where is the *limit* to their capacity? The fact is, that the tracks and machinery of a railroad can always be adapted to the amount of its business; and that business will always pay, when the machinery is adapted to it. *Steam* is the great conqueror over all motors, and in that, the locomotive triumphs.

INDIANAPOLIS.—We notice in the Indianapolis papers a notice of a meeting of merchants with reference to the re-organization of the Board of Trade of that city. Besides the organization of the Board on a permanent footing, the meeting recommended the publication in pamphlet of suitable tables and statistics to show the business of the city and its commercial importance, with maps of the city and suitable information about its railroads, hotels, etc. Our neighbors seem to be waking to the importance of spreading abroad correct information about themselves and their city.

#### THE RESPONSIBILITY OF STOCKHOLDERS FOR DEPRECIATION OF THEIR STOCK.

There is no subject on which there is so much ignorance and misapprehension as there is on the question as to where the responsibility lies when railroad stock is depreciated. Stockholders elect to-day a board of directors, and leave the whole control of their affairs in the hands of this board and its officers, and a year hence meet, receive a report from them, re-elect the same board—never questioning one single item of the whole mass of expenditure which goes to form the outlay of the company—and then return to their homes, arguing that they have done all they could to protect their interests. The stock of the company, in the meanwhile, is suffering a rapid depreciation, and all the heed they pay to it, is to sell what they can at the first opportunity, in many instances making a considerable sacrifice to do it. The blame is then thrown upon the officers of the road alone, and they are called all the hard names usually found in the vocabulary of business men; when, as in nine cases out of ten, the officers merely lacked in judgment; and had they been sustained by the advice of the stockholders of the company, would never have incurred the expenditures which are the source of its misfortunes. On this subject we find the following well written article in the Indianapolis Journal of May 31st. The writer says:

The farmers of Indiana have a two-fold interest in our railroads. A large number of them are stockholders, receiving no dividends on their stock, and a still greater number have their products lessened or increased in price, according to the rates charged for transportation by our railroads. For these reasons we shall occasionally advert to them.

As a correspondent of the *Journal*, we have endeavored to draw public attention to certain evils connected with the management of our roads, and to two especially—want of economy in their construction and management, and the deceptive character of the President's reports.

We had almost come to the conclusion that stockholders were too indifferent to regard their own interests, but our courage is strengthened by the perusal of an article in a recent number of the *Railroad Record* published at Cincinnati, inquiring into the reasons why railroad credit is depreciated.

These reasons, in the opinion of that journal, are three:

1. Old companies, with finished lines, do not close their construction account.
2. Not declaring cash dividends when they have really made it.
3. Not reporting accurately their true condition, or erroneously representing it.

The readers of the *Journal* will remember that we referred to the first and third of these causes. We showed by the reports of the President of the ——— Railroad, that after *nine-tenths* of the grading and bridging had been done, and 173 miles of the track laid, that the estimated cost was five millions. Yet each successive year the cost continued to increase, as follows:

|           |             |
|-----------|-------------|
| 1853..... | \$5,000,000 |
| 1854..... | 6,031,524   |
| 1855..... | 6,643,169   |

The *Record* gives us another instance to show the necessity, that when the road is run over its entire track, the construction account should cease and all subsequent expenses be charged to the running account. The road it refers to cost when finished in 1852, \$2,100,000, and subsequently increased as follows:

|           |             |
|-----------|-------------|
| 1853..... | \$2,600,000 |
| 1854..... | 2,900,000   |
| 1855..... | 3,103,000   |

Doubtless its President, like President ———, showed in his annual reports a nice sum realized by the business of the road after all running expenses were paid, but had this increase of construction account been properly charged to the running account, a very different result would have appeared.

In relation to the meagre reports usually given by the Presidents the *Record* very justly remarks:

"The public, in spite of all the declarations of railroad companies to the contrary, do not believe a company or a man is prosperous when he refuses to tell any thing about his condition. It is not natural for prosperous people to believe so; and when darkness is preferred to light, there is a strong inference against whoever has that kind of taste.

"The proof of cooking accounts is one of the commonest things in railroad reports. The figures are given with the utmost apparent candor and accuracy; yet at the bottom they do not give a true statement. To sift the facts and get the truth is what few persons can do, and so the misrepresentation goes unchallenged."

We commend these declarations of the *Record* to the consideration of every stockholder in our railroads. Do they not show the imperative necessity of the recommendation we have made—to require, by law, a full and detailed report of each transaction during the year?

We now suggest an additional safeguard to the stockholder, which we see is now being adopted by certain cotton manufacturing companies in the East. It is this: *to create a committee of the stockholders*, with power to examine into all the acts of the Directory. This would prove a most admirable check upon them, for it would expose, immediately, a wrong, or an extravagant, or a dishonest act of any one of them, or of any officer.

That our readers may form some idea of the profits of railroading, we subjoin the following results of eight principal railroads of Massachusetts, as shown by the reports of the Legislature of that State. We take them from the *Rural New Yorker*:

1. The cost of passenger transportation is 2.062 cents per passenger per mile.
2. The cost of merchandise transportation is 3.095 cents per ton per mile.
3. In passenger transportation 41.98 per cent. of the receipts therefrom are absorbed in expenses.
4. In merchandise transportation 88.52 per cent. of the receipts therefrom are absorbed in expenses.
5. The expense of railroads are almost invariably determined by the weight carried over the rails. For instance—the Eastern road, upon which passenger traffic predominates, is operated at an expense of \$3,670 per mile of the length of the road; whilst the Lowell, upon which merchandise traffic predominates, operated at an expense of \$12,478.
7. Of the expenses of railroads 30 per cent. are absorbed in maintenance of way, or road bed; 20 per cent. in fuel and oil; 20 per cent. in repair of engines, tenders, and cars; 10 per cent. in special freight expenses, and the



remainder in passengers, incidental and miscellaneous expenses.

8. The weight of the engines, tenders and cars upon passenger trains is nine fold greater than the weight of the passengers.

9. The weight of the engines, tenders and cars upon freight trains is scarcely one fold greater than the weight of the merchandise.

10. For cheapness railroads cannot compete with the canals in transportation of heavy descriptions of merchandise; the cost of carrying merchandise upon the Erie canal ranges from two to sixteen mills per ton

6. The cost of renewals of iron upon railroads is an infallible index of the magnitude of expenses. For the preceding reasons the cost of the item on the Eastern road is but \$390 per mile of the length of the road, while upon the Western it is \$1,399.

per mile; whilst upon sixteen of the principal railways of New York and Massachusetts the cost of carrying merchandise ranges from thirteen to sixty-five mills per ton per mile."

These expenses show the absolute necessity of economy; and there is but little doubt that the credit of Western roads is destroyed in consequence of the want of it. And how, under present circumstances, can their suffering stockholders enforce economy, when, by our legislation, a self-elective Directory vote themselves year after year into office, and the President so shapes his annual report that "to sift the facts and get the truth is what few persons can do?" How evident is it, that each road should have a *committee of stockholders*, which will shield them from the extravagance and recklessness of the Directory and President. No one at all acquainted with the officials of our roads, but must be satisfied that there are at least double the number of them than ought to be; that there is more riding in the cars by them, than work done, that there are more dollars paid them than dimes earned by them. So long as these abuses are continued, we need not anticipate even the lowest dividends. We hope to see very different legislation than that attempted by our last Legislature, but which was defeated in the House by the uncompromising resistance of *Walpole, Hudson, Wilson*, and others.

#### COAL, COPPER AND ROADS AT SAN DIEGO.

San Diego, our readers will recollect, is to be the termination of the Texas Western Railroad. It will also be recollected that some months since we announced the discovery of a coal bed at San Diego. This fact is of great importance, but it has been denied, and even those who were well acquainted with the country supposed that it could not be so. We are glad to see, however, by the last San Diego *Herald*, the discovery of coal near that place is fully confirmed. A bed of good coal, sufficiently thick for working purposes, has been opened. A shaft has also been run down, piercing several small strata, from 16 to 20 inches thick. This discovery is of importance in every point of view. It is important to San Diego, as a place, and it is important to the construction of a railroad over the Colorado plain. We also learn that the copper mines of Ajo are doing remarkably well, notwithstanding the fact that the copper ore has to be wagoned from the Colorado to San

Diego! A tolerable wagon road has been made, so that the mail wagons now go through in *ten days*. This is making good time for that country.

These facts are all in favor of the Texas Pacific Road. San Diego, which we have already said was one of the best harbors on the Pacific, is likely to prove as good a termination for the Pacific Road as any other.

## Correspondence.

### PACIFIC RAILROAD.

We have received the following communication from a gentleman interested in Georgia railroads, and a resident of that State. It clearly points one great fact, that all sections of the Union have a great interest in the early completion of the Pacific Railroad. That there is no section of the Union that is not interested in changing the channel of the world's commerce, and bringing it through our own borders:

MESSRS. EDITORS:—I have just received a number of the "Railroad Record," am much pleased with the *form* of the publication, and highly gratified with the large amount of railroad information contained in it; and to all who desire a regular weekly bundle of railroad news, I most heartily recommend the "Railroad Record."

Having observed with some interest the western movements in connection with surveys, for some time past, for a great railway to the Pacific, I feel the deepest interest in that subject, the magnitude and importance of which exceeds any railroad enterprise ever projected.

I think the Texas Legislature has honored itself beyond all praise, for the very large and magnanimous grant of lands made to the Texas Western Railroad Company; and from reliable information received in regard to the details of that company, I am resolved to invest all the funds I can spare in the stock, believing, as I do, that in addition to the superior advantages of the company, their line through Texas will most certainly be adopted as the route of the great Pacific Railroad.

And I may be permitted to say, in this connection, that my interest in this great enterprise is magnified, in view of the interest I hold at home in the Brunswick and Florida Railroad, which looks, by its charter and its friends, to a direct and speedy connection by rail with the great Pacific route through Texas.

I presume ere this will reach your columns you will have seen the annual report of the above road, as adopted in the city of Brunswick, Ga., on the 15th of May last. By that report you will perceive in which direction we look for a railroad connection with the great west. Our charter authorizes us to construct our road to a point connecting with

Alabama railways now projected and in course of construction, pointing to Vicksburg, Shreveport, and the Texas Western Railroad. I look to the day as not very distant when we of Southern Georgia can have the privilege of traveling to California on a railroad.

I am pleased to see in the last number of the "Record," the proceedings of a meeting of the friends of the Vicksburg and El Paso Railroad, which was held in Marshall, Texas. Our friend from Brunswick, Ga., T. Butler King, was present, and interested the meeting with a spirited speech on the subject of railroads.

WACO, McLELLAND CO., TEXAS, June 5.

EDITOR R. R. RECORD—DEAR SIR:—Col. A. B. Gray and party arrived here, from Fort Graham, 40 miles northwest of this (near the Brazos), last evening. Observations have been taken at all important points from Shreveport, in Louisiana, to this place, which, when completed, will give the true geographical positions of these points, and also show a very favorable profile for a railroad. I have traveled extensively in the western States, North Mexico, Kansas, Nebraska, Utah, Oregon and California, and I can safely say that the route we have just passed over, exceeds all others in fertility of soil, salubrity of climate, and unsurpassed loveliness of scenery.

We were courteously received by the citizens along the route, all of whom seemed to take a deep interest in the great enterprise in which we are engaged. The party are in fine health and spirits. Col. Gray and Dr. Jordan take the stage in the morning for Austin, and the others return to Marshall.

Emigration is pouring into Texas, and the whole country is prosperous. Crops are fine, corn is now silking out, and promises a most abundant crop. There is a large trade in the stock of the country. Thousands of cattle, mules and horses are driven from lower Texas to Missouri, Iowa, and Illinois, and just at this moment there is a drove of two hundred head of mules and horses passing our camp for Iowa.

I will write you from Marshall.

Yours truly,

LOCAN.

GALENA AND CHICAGO RAILROAD.—The following table exhibits the amount of the various articles transported over the Galena and Chicago Railroad in the month of April, 1856:

| RECEIPTED.             |            |
|------------------------|------------|
| Flour, brls.....       | 4,702      |
| Wheat, bu.....         | 44,856     |
| Oats, bu.....          | 44,462     |
| Corn, bu.....          | 102,716    |
| Rye, bu.....           | 1,295      |
| Barley, bu.....        | 775        |
| Potatoes, bu.....      | 16,000     |
| Provisions, lbs.....   | 114,800    |
| Pork, lbs.....         | 382,020    |
| Paper, lbs.....        | 73,410     |
| Sundries, lbs.....     | 1,801,340  |
| Hides, lbs.....        | 265,160    |
| Wools, lbs.....        | 3,950      |
| Mill stuffs, lbs.....  | 259,670    |
| Whisky, brls.....      | 2,384      |
| Grass Seed, lbs.....   | 74,220     |
| Milk, lbs.....         | 64,400     |
| Horses and Cattle..... | 3,255      |
| FORWARDED.             |            |
| Merchandise, lbs.....  | 25,132,480 |
| Lumber, ft.....        | 7,873,390  |
| Lath, m.....           | 13,434     |
| Shingles, m.....       | 6,406      |
| Posts, stas, &c.....   | 225        |
| Iron, lbs.....         | 369,330    |
| Coal, lbs.....         | 1,834,460  |
| Salt, lbs.....         | 730        |



## BEAUFORT HARBOR.

A few numbers back we published an interesting communication in relation to this harbor, showing its capacity from actual survey and establishing the remarkable fact that it is one of the best in the Union and the best at the South. In the June number of DeBow's Review, Mr. George P. Elliott gives the following interesting remarks, which we republish, as the subject has new interest to us in proportion as we draw nearer the completion of the Cincinnati & Charleston R. R. connection.

In a recent number of your Review there is an article from the pen of the Hon. D. L. Yulee, urging the claims of Fernandina, in Florida, as the outlet to the trade of the Gulf of Mexico. As this gentleman has abundant opportunity for collecting, and accurately stating, his statistical information, I shall assume his statements as correct, and shall make my comparisons accordingly. It will be seen by the report above, that the main bar of Port Royal is nearly a mile in width, and has nineteen feet at low water upon it. This depth exceeds the bar of Charleston by nine feet, the Savannah river by eight feet, the bar of Ferdinand by five feet, and the bar of Baltimore by three feet. The report states that the mean rise and fall of the tide is seven feet; this, at high water, would give twenty-six feet at ordinary tides, and twenty-eight at the spring, and frequently a northeaster would bring thirty feet upon the bar. This depth is sufficient for all the naval and commercial purposes of the present day. It will be seen, by referring to the records of the New York commissioners of pilotage, "that of the vast number of vessels which entered the port of New York during the year ending June 1, 1855, only seven exceeded twenty-two feet" in draught of water. This fact alone places Port Royal far beyond competition with any harbor south of the Chesapeake, and makes her equal to any other Atlantic port, with, perhaps, the exception of Newport. This statement is beyond cavil, for heretofore the record of the scientific officials of the Government; it is no hearsay statement, but the record of a proven fact.

The first position that I aimed at I think I have demonstrated, namely, that this is not only the best harbor of the South, but one of the very best in the whole Union.

The next point to which I would call attention is that the Government must of a necessity fortify it, and build a naval station and dockyard here. It would be wanting in common sense and common precaution to permit this position to be left undefended, liable to be taken possession of by any maritime power that we may be at war with. It is the only port south of the Chesapeake that a line-of-battle ship, with her full armament on board, can enter; and the harbor has depth and capacity sufficient, when once entered, to ride the whole navies of the world in safety. If it is inquired why it has been neglected so long, the answer is easy of solution—the Government was ignorant of its great capacity, and the inhabitants who dwelt upon its shores were unwilling to exchange their quiet homes for that of bustling commerce, and have ever refused to press its claims upon public attention. The British Government, however, had full knowledge of its advantages, for they had stowed away in their archives an accurate survey of this noble harbor, taken

when South Carolina was a "plantation." A century had passed away between the two surveys, yet they corresponded in all essential particulars with remarkable exactness. Lieutenant Maffit, in his report, says: "Beaufort river, also a tributary of Port Royal Sound, affords eighteen feet at mean low water until within three miles of the city of Beaufort, from thence up fourteen feet at mean low water is the least that can be found in the channel.

"The commercial facilities of this harbor are unrivalled, and their developments will be fully exhibited by the progress of the coast survey."

From the record you will perceive that any ship drawing twenty feet can reach the present wharves at Beaufort, and a little dredging will enable the largest class to come up also; but this will not be necessary. The town of Beaufort is situated upon the upper end of a tongue of land, which extends itself down towards the sea; and at the extremity of this tongue, four miles below the present town, twenty-four feet is found, at low water, within a few feet of the shore, and this depth gradually deepens to five, six, and seven fathoms; if the mountain cannot come to Mahomet, Mahomet will go to the mountain. Beaufort will easily and naturally extend itself down to deep water.

The next point that will attract attention is the subject of health. In the location of a city near the tropics, this is an important consideration, and in this view Beaufort can compare favorably with most of the cities situated along the South Atlantic coast. It is situated on the South-eastern extremity of Port Royal Island, which is ten miles in length, and is entirely surrounded by salt water. No fresh water stream of any magnitude flows into Port Royal Sound. The site of the present town of Beaufort is open to the northeast, east, and south, and is fanned by the sea breezes during the summer season, and should it extend itself down the river, it will be gradually opening itself to the southwest and west, where the salt marshes of the Jordan reach Broad River, and the two together extend themselves for many miles in an open and splendid view. As the prevalent winds during the sickly season are usually from the southwest, it is a very important consideration in the location of a Southern city that it should have a salt atmosphere in this direction, and Beaufort stands unrivalled in this peculiarity. Charleston is similarly situated, but she has not the extent of salt water in the desired direction, and both the rivers that touch her wharves penetrate the interior, and are more or less impregnated with fresh water, whereas Beaufort is entirely surrounded by salt water arms of the sea, which are nearly as briny as the ocean itself. Experience has taught us that the locations upon the sea coast, invariably the most healthy, are those that have salt water to the south and west, and those most sickly that have land in the same direction. As an illustration of this point we will state, as a fact, beyond cavil, that the western shore of the island of Hilton Head is remarkably healthy, while the eastern shore, open to the great Atlantic itself, is proverbially unhealthy—and so it is with other islands along the coast. The thing is only explained by the fact that the fall winds, the south-westers pass over the land instead of the salt water, bringing poison in its breath.

If I have succeeded in establishing the important point of health, the next step to give importance to my scheme is to show its posi-

tion as to the internal trade of the South. The isolation of Beaufort has been hitherto caused by its having no great river emptying itself into its wide waters from the interior. I have remarked elsewhere, that great rivers were formerly the feeders of cities but now that railroads are superseding them, it places Beaufort in a new light altogether. A road of eighteen miles will reach Pacotaligo, a station on the Charleston and Savannah Railroad. This would put Beaufort in direct communication with both of those cities, and all their tributaries north and south of them, by pushing this road through upper Prince Williams, a branch road near the Barnwell line would reach Branchville, upon the South Carolina road, at a distance of 65 miles from Beaufort. This junction would put Beaufort in connection with all the roads that run from South Carolina into North Carolina, Georgia and Alabama. The main track should be directed for Augusta, passing through Barnwell village and touching Aiken in its course. I estimate that 115 miles will be the whole distance from Beaufort to Augusta, in Georgia. Only two streams are to be crossed by this route—an arm of the sea near Beaufort, 600 feet in width, and the Savannah river, at Augusta. The country through which it would pass is well adapted for railroad construction. This route would furnish a new line and outlet to the great trade that is anticipated from the completion of the Blue Ridge Railroad. It is scarcely necessary to pursue this point further. A road of 115 miles to Augusta will put Beaufort in contact with Memphis, and when the connection between Selma and Brandon is completed, it will be in contact also with Vicksburg, upon the great Mississippi itself. Of all the projects for a road to the Pacific, that which will pass near the 32d degree of north latitude will be found the most practicable. It is not only the shortest route from the North Pacific to the North Atlantic Oceans, but has also the advantage of passing through a climate that will enable it to be used at all seasons of the year. The frosts of winter and the heats and pestilence of summer will furnish no interruptions to its constant use.

The Cincinnati *Railroad Record*, which would be suspected of a bias towards its own latitude, in an article on the "Climatology of the Pacific Railroad," says:

"The difference in climate is immense. At Council Bluffs, and from thence west, the thermometer fell during last winter as low as 30° below zero; but in the latitude of 32° only to 10° above. So the difference of climate in extreme cold weather is 40°.

"The consequence of this great difference of climate will operate in many ways favorably to the southern route.

"1st. The Texas road will not cost more than half what the northern route will. This is so plain, that if a bonus of fifty millions of dollars were given to make the road on the middle route, a company had better make the Texan road without a bonus. In fact, the Texan company can better afford to make their road without the aid of Congress, than the other companies can afford to make it with a bonus.

"2d. The running of the road will be so much cheaper that the Texas company can make a large profit when the others can make none.

"3d. The advantage to passengers will be equally great. In both summer and winter the climate of northern Texas is pleasant and healthy. In one half the year, at least, it



will be far pleasanter to travel the Texas route.

"In a future number we shall discuss this topic at more length, and in the mean time we trust our readers will examine the reasons which make the Texas route the best."

The justness of these observations must be apparent to the most casual observer. If, then, the route on or near the 32d parallel is to be the best route from the Pacific to the Mississippi, it would seem reasonable that the same line should be continued by the shortest route to the deep waters of the Atlantic. By a strange coincidence, the only deep port at which the heaviest ships of the world can enter into, upon the whole southern Atlantic coast, is the harbor of Port Royal, situated upon the 32° of north latitude—the identical degree assumed by the War Department as the best for the Pacific road beyond the Mississippi.

It would appear, from the facts we have illustrated, that nature points to Port Royal harbor as the great future mart of the American Union. Mankind are slow in believing in any new project, more especially if it interferes with or runs counter to any scheme or fancy of their own. As surely as time rolls on day by day and year by year, we will see the finger of commerce pointing towards this port, directing her votaries to her future shrine, where, in after times, they will shower in her lap the "wealth of Ormus and of Ind."

From the Austin State Gazette.

#### TRI-MONTHLY STAGES TO EL PASO.

##### PUBLIC MEETING IN EL PASO COUNTY.

A public meeting of the citizens of El Paso county, was held pursuant to previous notice, on Thursday, 20th March, 1856, at Ysleta, the county seat of said county, for the purpose of taking into consideration the propriety of a tri-monthly mail coach line from San Antonio, by way of El Paso to San Diego, in California.

On motion, H. L. Dexter was called to the Chair, and Francisco Pasos, appointed Secretary. The object of the meeting was then explained by the Chairman in English and Spanish, and on motion of W. Claude Jones, Esq., U. S. Attorney, a committee of three was appointed to draft resolutions, expressive of the sense of the meeting.

Whereupon, the Chair appointed Gen. Jones, J. M. Gonzales, and M. Torreo, said Committee. The Committee, after retiring to consider the subject, submitted the following report and resolutions, through Gen. Jones, their Chairman.

The Committee appointed to draft resolutions expressive of the sense of this meeting, respectfully report:

That they are deeply sensible of the great importance of calling public attention to the necessity and propriety of establishing a *tri-monthly* line of mail coaches, from some point on the Gulf of Mexico, by way of San Antonio and El Paso, to San Diego, in California. This route is eminently the best and most practicable. Free from the snows of winter and the withering heat of summer; passing through a climate salubrious and delightful; tracking fertile and beautiful valleys, and *not* endless, treeless prairies, and scorching deserts of sand. Encountering abundance of wood, water and grass, and *not* thirsty desert plains, and bleak barren mountains, burning as a furnace in summer, and frozen and ice-

clad in winter. Open and passable at all seasons, with everything to cheer the emigrant and traveler, in rich soil and varied landscape, with no mountain barriers—no natural walls across its pathway, the route contemplated is superior for a *great mail* and *emigrant road* across the continent, to any other north of it, and there can be none south, passing through our own territory.

The establishment of a tri-monthly mail line, on coaches, by this route, would tend greatly, not only to develop the resources of North Western Texas, but of the State—indeed of the whole Union. It would be the first active, progressive step in the establishment of the great Southern Pacific Railroad. It would direct public opinion to definitely settle down on that route which is marked by nature as the nearest, cheapest and best. It would form an active stream of travel across the continent, and unfold to light, not only our great resources, but the practicability of the railway. It would be the cheapest and best means of transporting the *mails*, and we believe that a contract could be procured for carrying them *tri-monthly*, at *less than one-half* what is paid by the Government, to the Panama mail steamers.

"The mails could be carried with more promptitude and less risk. The route contemplated is the best natural road in the world. By a little improvement—a bridge across the Pecos, and some little work on the Tan Pedro and Gila rivers, it could be rendered so that no road of the same length, on the surface of the globe, could compare to it. There is but little danger to be apprehended from the Indians. The monthly mail, by this point, generally passes in security. Military posts exist along the line. Others will shortly be constructed on the line of the new boundary, under the Gadsden Treaty, and there will be less danger from these wild tribes, than from accidents on the ocean.

Several stage routes already meet in San Antonio, and bifurcate from that point. One comes from Galveston, by way of Austin, the other from Indianola. These are tri-weekly. From San Antonio, there is a route to Eagle Pass, and a monthly stage to Santa Fe by way of El Paso. Without any relay, or change of mules, this distance (672 miles, from San Antonio to El Paso), is made in from fifteen to eighteen days. El Paso is the half-way point to San Diego. With a frequent change of mules at suitable points on the route, at the rate of four miles an hour, this distance could be made in seven days, and seven more, would place the stages in San Diego. Thus the entire distance of 1,354 miles, from San Antonio to San Diego, could be made in fourteen days, if not less. This is a much shorter time than the mail steamers make the distance from New York to San Diego, and shorter than from N. O. to San Diego. With a telegraphic line continued to San Antonio, orders of the Government and news of importance, can be carried by the tri-monthly mail, to our possessions on the Pacific, sooner than by the steam mail line. In case of war with a naval power, the steam mail would be endangered by the enemy's cruisers. Passing secure through the interior of the country, orders and despatches of the Government would not be exposed to the danger of capture by an enemy.

This route once permanently established, would induce the adventurous pioneers to make settlements in all the rich valleys, through which it passes. Thus, a nucleus

would be formed for colonies, furnishing protection and security for the mail party. It would enhance the value of the public domain in Texas, as well as the rich and beautiful valleys, belonging to the General Government, on the San Pedro and Gila rivers.

Far south of the region of ice and deep snows, this route is clear, open and unobstructed, and appears traced by the finger of God, across the continent. It is time that we should avail ourselves of it. Let the voice of the people be heard, from their primary meetings, from the stump, from the press, until the omnipotence of public opinion moves our national Congress to do its duty. Therefore, they recommend the adoption of the following:

*Resolved*, That we regard the proposition of establishing a line of tri-monthly mail coaches on the route from San Antonio, by way of El Paso, to San Diego, in California, as eminently practicable, and of the greatest public utility.

*Resolved*, That it is not local hut national in its character, benefiting the whole Union, by opening a channel of communication from the Atlantic to the Pacific.

*Resolved*, That regarding the road by this route as a national military and mail road, conducive to the best interests of the whole country, we believe that the Government possesses the constitutional power to improve it.

*Resolved*, That our Senators and Representatives in the Congress of the United States, be requested to use their utmost endeavors to establish the said tri-monthly mail coach line, and to procure an appropriation to improve said road.

*Resolved*, That a copy of these proceedings be forwarded to each of our Senators and Representatives in Congress, also to those of the State of California; and that the *State Gazette*, the *San Antonio Western Texan*, and *El Bejareno*, with other papers in the State, favorable to the enterprise, be requested to publish the same. Which was unanimously adopted, and on motion, the meeting adjourned, *sine die*.

H. L. DEXTER, Chm'n.

FRANCISCO PASOS, Sec'y.

#### TEXAS RAILROADS AND SCHOOL FUND.

The Clarksville (Texas) *Standard*, of the 17th, in some remarks on the loan bill of the last session, says:

As to the system of railroad improvement recommended by our present Governor, a bill for the adoption of which was also before our Legislature last winter, and will be again in July; we are utterly opposed to it. It would in its operation seriously embarrass many of our citizens, and have a great tendency to check that immigration into our State which is so much needed to develop our resources.

Let the school-fund be used in some such way as that recommended in the bill on which our Legislature will be shortly called on to act, and we doubt not that such a state of prosperity will begin in our State as has not been equaled in the history of the United States. Texas is yet destined to be the Empire State of the Union, and we see in this movement the dawn of her prosperity. Thousands are deterred from coming to cast their lot in our country, from the want of facilities for transporting the imports and exports.—They visit our State, admire the richness of our lands, believe them unsurpassed in the world, but the difficulties of getting the pro-



ducts of the soil to market, induce them to remain in the old States, and spend their best exertions in very unremunerating labor.

On this subject the Dallas (Texas) *Herald* of the 10th says:

Pass the loan bill, and all the desired aid is furnished. With a loan of \$6,000 or \$8,000 per mile, the construction of railroads will progress with ten-fold rapidity. This amount will at least furnish the iron, the great desideratum, because its purchase requires cash. It will be a sufficient guarantee to secure contractors able to complete the work. There are men now waiting to embark all their capital in constructing the roads, without a mortgage upon them, should this loan be made. Pass this bill, and we confidently believe the Galveston and Red River Railroad would, in two or three years at the furthest, reach the southern boundary of this county. The Memphis and El Paso Company would immediately commence operations under their magnificent charter, and enter at once upon the construction of their great enterprise; and other roads, in other portions of the State, would receive a corresponding impulse forward.

From the Alta California, May 20.

**FROM THE ARIZONES.**—From Mr. Edward E. Dunbar, who arrived in town on Thursday last, we have intelligence from the Arizona Mines up to April 19th. Everything was in a flourishing condition, the mine continuing to yield richly, and the company are in good health and spirits. Mr. Dunbar informs us that the great desideratum, a permanent supply of good water, has been found in the mine, at the depth of 70 feet from the surface.

Mr. Dunbar is of the opinion, from actual experiments made, and from the result of close observation, that water can be had by sinking wells throughout that portion of New Purchase which has been represented as being a wild, trackless desert—an opinion which he assures us is erroneous, as there are large tracts of land which could be made very productive by irrigation, which might be accomplished by sinking artesian wells. The experiment has not yet been made, but Mr. D. is of opinion that it would prove highly successful. This goes far to sustain the assertions made by the friends of the southern route, that water could be obtained along that portion of the route, and experiments are shortly to be made that will determine the matter beyond a doubt.

The Apaches have been very troublesome in Zonoita, and other places in that region, committing wholesale robberies, and indiscriminately murdering all who fell into their hands. They have not made any hostile demonstrations on those employed at the mines, although they have been seen hovering around, and the company have been compelled to keep up a strict guard to prevent a surprise.

A new route has been discovered from the Arizones to the Colorado River, over which the trip can be made from the mines to that point in two and a half to four days. Mr. Dunbar came through from the mines to San Diego in eleven days. The company will shortly put a train of wagons on the new route to the Colorado, for the transportation of their copper ore, which is now brought to the river on mules.

**MADISON AND INDIANAPOLIS R. R.**—The gross receipts of this company for the last fiscal year were \$236,146 82. The expenses for the same period, \$173,266 94.

[From the Prairie Blade May 23.]  
**RIVER AND RAILROAD MEETING  
AT CORSICANA.**

At a large and respectable meeting of the citizens of Kaufman county, and the surrounding country, held at the town of Kaufman on May 13, 1856, in behalf of the River and Railroad interest of the State, Dr. S. G. Parsons was called to the chair, and E. C. Tinnin Esq. appointed Secretary, after which the meeting was addressed by the Chairman, Col. C. A. Harper, and Col. J. M. Crockett, in a forcible and eloquent manner, at the close of which the following Resolutions were offered and explained and forcibly advocated when they were unanimously adopted to wit:

Whereas, at the late meeting of the Legislature, a bill was introduced providing for the setting apart an adequate fund, for the improvement of the navigation of the rivers of Texas; and whereas, the provisions of said Bill meet with our full and entire approbation, therefore

Resolved, that we the citizens of Kaufman County in mass meeting assembled, hereby pledge ourselves in the event that said Bill becomes a law to raise sufficient means, with the aid to be given by the State as provided in the aforesaid Bill,—to remove the obstructions to the navigation of our River, to the full extent of the River front of our County upon the Trinity River; and that we most respectfully, and earnestly, invite the citizens of the Trinity Valley, to take such action in the premises as will secure the great benefits which must assuredly result from a general work upon the whole River.

Resolved, that we do not view the construction of Railroads as antagonistic to our River navigation, but on the contrary we are convinced that each will add greatly to the importance of both.

Resolved, that the "loaning policy" by the State as it is termed, to aid in the construction of railroads, meets with our full approbation, and we therefore request, and instruct our Representative to support the same to the extent of \$8,000 per mile, upon sufficient and ample security being given.

Resolved, that a committee be appointed by the Chair of one from each of the Upper Trinity counties, with the request that they will forward the objects of this meeting by addressing the people and bringing the subject before them on all suitable occasions, until we shall be able to avail ourselves of the great advantages, resulting from the accomplishment of the same.

Resolved, that the Chairman be requested to appoint seven delegates to represent Kaufman county in the convention, to meet at Austin in July next, and that they be requested to urge the convention, to take a favorable action in behalf of the important Rivers of our State, as well as the adopting of a wise, efficient, and practicable system of Railroad improvements which shall afford equal benefits to the different sections of our State; whereupon the following gentlemen were appointed, Delegates—viz: R. A. Terrell Isham Chism, H. R. Vollintine, Sam. Jordan, T. C. Crouch, B. M. Ballard and Isaac Houston. On motion the Chairman was added to the above Delegates:

Resolved, that all editors of newspapers in the State, who are friendly to the objects of this meeting, be requested to publish the proceedings of the same.

S. C. PARSONS, Chr.  
E. C. TINNIN, Sec.

**PACIFIC R. R. AND THE CONVENTIONS.**

One indisputable evidence that the Pacific R. R. question is regarded as the great question of vital importance now before our people, is the fact that the three great Conventions which have met with reference to nominating a candidate for the Presidency, have passed resolutions declaring themselves in favor of the speedy construction of this great national highway.

With these precedents before them, of the actions of men fresh from the native sentiment of each portion of our people, from Maine to California, with the unmistakable evidence of a nation calling to its rulers to supply a nation's wants, one can hardly conceive that the present Congress will delay to supply a deficiency so universally felt.

The following from the New York *Herald*, of June 20th, will show the opinion of the letter writer to that journal:

Since the Cincinnati, New York and Philadelphia Conventions have recognized the Pacific Railroad as a legitimate plank in their platforms, the construction of this road is no longer considered as problematical. The special committee will report, at an early day, after business is resumed by our national legislators, a bill providing for two roads—one to be constructed by the several roads now already chartered through Iowa and Minnesota, by a union of said roads at Fort Kearney, and from that point a single trunk road to the navigable waters of the Pacific Ocean. That portion of the Northern route which lies within the State of California, will be assigned to the San Francisco and Sacramento Railroad Company. The Southern route, through Texas and by El Paso, is to be constructed by the Pacific and Atlantic Railroad Company of California and their associates, from San Francisco to El Paso; from that point eastward, through Texas, the road is apportioned to the several roads of Texas already chartered. These roads are to run from El Paso to such point on the eastern boundary of the State as they may select. The connections with the Mississippi river are then given to the several roads of Louisiana and Arkansas as desire to make them, and to such points on the river as they may select. Such is the substance of the bill, which meets general approval.

**BRUNSWICK AND FLORIDA R. R.**

*Report of the President and Directors to the Stockholders, at their Annual Meeting, in the City of Brunswick, May 15, 1856:*

The year that has elapsed since the Board of Directors of the Brunswick and Florida Railroad Company had the privilege to greet their stockholders in annual meeting, has been one of eventful interest to their work. From amidst the doubts and perplexities which have everywhere cast their frowning shadows upon it, one great, significant, incontrovertible fact stands out before you, and boldly claims your recognition. It is that the city of Brunswick has at length a railroad within her borders—the first link in that chain which is to unite in bonds of iron the shores of the Atlantic Ocean and the shores of the Mexican Gulf. With the evidence of your own senses you have attested the reality of its existence. The fears of the timid, the doubts of the sceptic, the sneers of the malevolent must henceforth find some other object on which to display their genius and pour forth their spleen. They have no longer a vocation here.

It is undoubtedly true that the work has not



been prosecuted with all the energy and vigor which, from the earnest character of our last communication to you, might reasonably have been expected. Up to the commencement of winter, obstacles, numerous, grave, and in some instances almost insuperable, crossed our plans, enfeebled our purposes, and retarded our progress. For the latter delays—especially those affecting the delivery of the iron—we are in no sense responsible. Against the rigors of a hyperborean winter—having but few parallels in our region—we struggled with a strong will, though for a time in vain. From the day on which the iron contract was signed, there has not been on our part, nor on the part of that respectable and honorable house with which the contract was made (the Bay State Iron Company, of Boston,) one moment's faltering, or one moment's purposed delay. The wharves in the harbor of Boston were blocked up with thick-ribbed masses of polar ice, and when at last a vessel was loaded and sent out, the inclemencies of the coast voyage presented obstacles as formidable as those which were left behind. We may cite as an example the case of the schooner "Lamartine," freighted with 244 tons of rails. She left Boston for this port on the 25th day of February. The next tidings we had of her came on the 14th of March, from Newport, R. I., where she had sought a refuge, and she did not arrive at Brunswick until the evening of Saturday, the 5th of April. Since then a number of vessels, after voyages more or less protracted, have supplied a sufficient quantity of rails to iron the road to the west bank of the St. Ila river—that long looked for goal towards which we have cast our straining eyes so long, and the attainment of which we have always regarded as alike the seal of the past and the guarantee of the future.

The Chief Engineer reports that there is at present employed on the road a force of about 230 hands. The grading of about 26 miles of the road is finished, and about 14 miles of iron rails have been laid. The ties are being rapidly delivered, and the laying of the track is proceeding at the rate of half a mile and over per day. The balance of the grading and bridging is under rapid construction, with the intention of crossing to the west bank of the St. Ila river sometime during the month of August.

The Board of Directors have instructed the Chief Engineer to survey and locate a branch line from some convenient point on our main line between the Okefenokee swamp and the Allapaha river, southwardly, to the north line of Florida, at such point as will best secure the trade of that region.

The Board has also instructed him to survey and locate a branch line from or near Thomasville to the Florida line, on the most direct route to Tallahassee that the country will admit of, so as to form the most eligible connection with a road from Tallahassee.

They have also instructed him to survey and locate a line from Albany, in continuation of our Albany branch, as now designated, on the most direct line the nature of the country permits, with a view to the best accommodation of the business of the country to Eufaula, in Alabama.

The financial condition of the company is substantially as follows:

## ASSETS.

|   |                  |
|---|------------------|
| Iron on hand, paid for.....                   | \$190,000        |
| Paid on construction.....                     | 183,000          |
| Equipment paid for.....                       | 15,000           |
| Miscellaneous, freights, engineering, &c..... | 35,000           |
|   | <u>\$423,000</u> |

The original issue of \$1,200,000 of bonds made by the Company and placed out of their hands pending the iron contract in England, is now, we are happy to say, in the control of the company, except \$80,000 placed as collateral with the Ocean Bank, to secure the payment of its debt of \$40,000, long since contracted; and excepting also one thousand dollars in the hands of D. R. Martin, and three sterling bonds of five hundred pounds each, placed by a former President in England—making in all \$88,500 out. Of this sum \$80,000 will be returned on payment of the Ocean Bank debt before alluded to—thus leaving \$1,191,000 of the old issue of mortgage bonds with the control of the Company.

We have alluded to some of the delays and impediments which have retarded the progress of this work. But other and graver causes intervened to arrest our action. It was known that a bill would be introduced into the Legislature of Georgia granting aid to the construction of this road. Public opinion in behalf of such a measure had gone up to the Legislative chambers from the best portions of the State. Indeed it is believed that if ever the clear, shrill, clarion voice of the people rang out its unanimous accord in favor of any one public law, it was for aid, substantial, direct, immediate aid to the Brunswick and Florida Railroad. That measure had the sustaining aid of true and ardent friends. The bill gasped out a sickly existence through the Senate, and finally laid its bones at the foot of the Speaker's chair in the House of Representatives. There it lies, without a monument, and without an epitaph.

It was no fault of ours that moneyed men at the north, whose disposition was to associate themselves with this enterprise, came to regard the affirmative or negative vote of the Legislature on this bill as a fair and safe guide for their own action. Men having no personal knowledge of the wealth and resources of your State, could not well draw the distinction between a mere negative for any cause on the part of the Legislature, and a sweeping condemnation of the enterprise itself.

But the spirit of the departed bill could not be wholly laid to rest. It walked abroad through the legislative aisles, troubling the brains and haunting the dreams of men, as if to demand some expiatory sacrifice for its own early dissolution.

And from its ashes there rose up another measure, of imposing aspect and formidable proportions, known as the Atlantic and Gulf Railroad Company, or by the more familiar title of the Main Trunk Bill.

In the form in which this bill was first introduced, we could not trace the slightest resemblance, in a single lineament, to the friend whose loss we were deploring. Indeed, looking to its practical effect, we could view it only as a proposition to deprive us of our distinctive character as a great original enterprise, confident in its own resources, and looking to these alone for ultimate recompense. In short, as a proposition to cripple us at the birth, and to turn all our advantages, labors, and sacrifices, to the use and benefit of others. It would have swung us violently round from that well selected line

which time and investigation have demonstrated to be the best and richest avenue for your trade and commerce, and would have left us little beyond the poor privilege of a branch, on which our friends might have diverted themselves with an occasional trip, to look upon the placid waters of the Oglethorpe Bay. It would have wrested us by force from our true position, and made us tenants by sufferance on that very domain where, of right, we might claim to be dictators. Brunswick was to come with suppliant hands and sue for favors where, by her prerogative, she could have demanded rights; and was to accept with lowly gratitude the stunted morsels doled out to her by the hollow and spurious magnanimity of older but feebler rivals. And it was not until two amendments had been adopted—the one bringing the point of junction down to the vicinity of Wareboro', and the other forbidding any payment to be made on the part of the State until our exclusive charter privileges had been released—that we could regard the bill in any other light than as presenting new and grave impediments to the progress of our work. It is due to ourselves, and to that reasonable degree of intelligence which we profess to have brought to the management of your affairs, to state that we have never misapprehended the provisions of this bill, nor failed to perceive the unsatisfactory conclusions toward which we believe they tended. We acknowledge, as we ought, the signal act of service which the interposition of the Legislature has, in one respect, done for us. It has given the weight of its sanction to the great, general truth, that a line of railroad, penetrating the tier of southwestern counties, opening their rich lands to settlement, and offering to their products the best markets in the world, is an inviting and an honorable enterprise. Whatever moral force there was in this admission has been reflected upon us, since it has brought conviction to the minds of those who could not have been persuaded by any less respectable authority.

We take leave of a subject which, by necessity, has filled a large space in our thoughts, with the single remark that if the Atlantic and Gulf Company should hereafter deem it their interest to turn the head of their locomotive down towards the line of the Brunswick and Florida Railroad, we will endeavor to meet his advances with the consideration due to so distinguished a messenger of light and civilization.

Where then did we stand? Upon the strength of our own good cause—upon the solid foothold of that foundation which we ourselves had laid. Again and again we looked at the project in all its lights and shades; we cast around us on every side for light and truth—nothing but light and truth—that we might know whether we had misled others, or deceived ourselves. We found that we had not. We saw that any statements put forth by us, of benefits supposed to be attainable by the completion of this road, fell short—immeasurably short of the full reality. We saw that when the line was once completed, the Atlantic and the Gulf were to be placed, as it were, cheek by jowl with each other; and that the trade and commerce—great in the present, and incalculably great in the future—which floated on their waters, were to be made tributary, in a great degree, to the port of Brunswick.

We will not be drawn aside from the more important objects of our meeting, to discuss the general advantages of this work. Some-

## LIABILITIES.

|                                     |                  |
|-------------------------------------|------------------|
| Total amount received on stock..... | \$143,000        |
| Outstanding bonds.....              | 240,000          |
| Due Ocean Bank.....                 | 40,000           |
|                                     | <u>\$423,000</u> |



thing has been said of them in former meetings here, and still more in the various documents published by order of Congress. We regard them as matters long since adjudicated, and as needing, therefore, no other argument from us or from you, than that which comes in the solid and unmistakable form of material aid. They are now admitted on every hand. They are recognized even in the national councils, where your efficient and able Representative, Col. James L. Seward, has succeeded in introducing, under the sanction of the committee on naval affairs, a bill authorizing the establishment of a naval depot in this harbor.

This, however, is at the best mere cumulative testimony. In the very initiation of the plans for the development of this region, they were sustained by the enlightened policy of the State, and even aided by her treasure. In the long interval that has elapsed some of the foremost men of Georgia, watching with deep solicitude the progress of those plans, have passed from the stage of human action; and it is but too true that for a season doubt and uncertainty as to objects and results took the place of that distinct appreciation of both on which alone the fostering aid of the State was granted. It is now conceded in all quarters that the highest interests of the State are inseparably blended with the completion of those plans. The people will acknowledge the weight of that authority which attaches to the names of distinguished citizens of their own State, speaking in the cause of Brunswick, and foreshadowing with almost prophetic truth the future that was reserved for her. Still there are a few suggestions which cannot at this time be regarded as uninteresting or unimportant.

The distance from Brunswick to St. Marks, via Thomasville, is 212 miles. This gives us a transit route between New York and New Orleans, by which, making a liberal allowance for detentions, we can transport mails, passengers, express and light goods in four days. The present mail time from New Orleans to New York is seven days.

The distance from Thomasville to the junction of the Flint and Chattahoochee rivers is 58 miles—or from Brunswick to the junction, 216 miles. The distance from the junction of the Flint and Chattahoochee rivers to Pensacola is 145 miles; and the total distance from Brunswick, via Thomasville, to Pensacola, is 361 miles. This route, when completed, will afford a perfect connection between the navy yards of Brunswick and Pensacola, and should receive the careful attention of the Federal Government. It is a much better connection than any other that can be formed between Fernandina and Cedar Keys.

TO BE CONTINUED.

TEXAS WESTERN RAILROAD.—Col. A. B. Gray, with a small party of assistants, left our town on Monday morning for the west, along the line of the Texas Western Railroad, as run by Maj. Blanch. We learn, from an interview with Col. Gray, that the object of this expedition is to locate the true geographical positions of all the most important points along the line, to the crossing of the Brazos, having reference to the location on the parallel of 32° north. So far, everything has favored the expedition, and Col. Gray has succeeded in obtaining good astronomical and barometrical observations in Marshall, Hogan's Ferry, on the Sabine, and at this point. Col. C. Bradley accompanies this expedition. —*Tyler Reporter, May 28.*

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking, or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance.*

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JULY 1, 1856

### RAILROAD RECORD.

E. D. MANSFIELD.....,..... EDITOR  
W. WRIGHTSON, ASSOCIATE EDITOR.

CINCINNATI, ----- TUESDAY, JULY 1.

#### PACIFIC RAILROAD—ACTION.

It is now the 1st of July, and Congress has not acted on the Pacific Railroad question. What becomes of the time of Congress has always been a mystery to us. We believe that the entire business of that body might be done in one-fourth the time usually taken; but it seems as if the personal interests of politicians were always esteemed higher and greater than any concerns of the people. In this case, we are still more surprised, from the fact that Congress seems to have made grants of land to the Iowa and Missouri, and Minnesota Companies, with a view to a union of those routes, as a Pacific highway. If these grants are to be made available at all, for such a purpose, a plan should be formed for a general route.

In our last we adverted more specially to the deposits of copper, silver, coal, and indeed to many kinds of minerals, which abound in the whole region, from El Paso to the Pacific; we would now look for a moment to the effects of a railroad across the continent. In this we take as a unit of measure, the present Panama route. We have all seen the prodigies of a circuitous route by the Isthmus. It has been thronged with a continual stream of persons and merchandise, and has proved the most successful speculation of the age. Yet what is it based on? Nothing but the commerce of California, which has sprung up within seven or eight years. But what is this to the commerce of the great Pacific? A mere nothing. That commerce may come, even over the Isthmus; but over a North American railroad, it would certainly come. Take this single fact: The distance by Panama, from New York to San Francisco, is *three times* as great, and the *time four times* as much.

A man going from New York to Panama, takes a long sea voyage, by way of Havana, through the heat and storms of the tropics to Panama; thence crossing by way of the railroad to the Pacific, must take another long voyage up the coast to San Francisco. The whole constitutes a long, tedious, and dangerous voyage. Numerous steamboats have been wrecked in that voyage, and thousands of passengers have lost their lives. The last dread-

ful scene of massacre at Panama may not be renewed; but it is only one of the many and various disasters which have occurred on that route. Now, suppose a person taking a car at New York for San Francisco. He would proceed through the most beautiful part of the United States, via Cincinnati, Cairo, Fulton, El Paso, and San Diego. He will travel less than 3,000 miles; he will go in six days; sleep comfortably; eat comfortably; and arrive safely, unfatigued. It is palpable enough, that this will be the grand route across the continent. But that is not all—it will increase the Pacific commerce ten-fold; it will carry the vast throng of business between America and Asia; from any part of the continent—from Canada and from Mexico—all persons engaged in Pacific commerce, will go to this line, as that from which they can best be conveyed over this continent. Such will be the effect of this road in increasing commerce, that after a year or two, it will be unable to do the business. Its effect over the continent will be precisely that of the great railroads over the Alleghenies. There are now four great railroads from the East to the West, and neither of them can find machinery enough to do the business. Such will be the effect of commerce on an inland railroad between the oceans. We speak of this commercial revolution, to be accomplished by such means, in order to show that this work is neither unimportant nor merely speculative. It is a practicable thing. It is something to increase commerce and develop resources, almost beyond the dream of imagination. If, therefore, Congress really intends offering any aid to this noble enterprise, it is time something was done. It were better Congress should frankly say that it will do nothing, than to keep the large number of parties and people interested in this matter in a state of doubt and uncertainty. Under the charters of Texas, we think the road can gradually be made at least to El Paso; and it will be more likely to be made that far, when it is known that Congress has cast off all other routes. But beyond that point no provision has been made, and it will be difficult to say when California can derive any advantage from a railroad.

Another thing we would also say,—that it is very evident if Congress does grant aid, it must be done to both routes. It is also very evident that if the Texas Western Co. make a road from Louisiana to El Paso, they will be justly entitled to some aid in that enterprise. We commend this subject to the speedy action of Congress.

#### MONEY, CROPS AND CREDIT.

Our readers will remember that two years since, when a temporary check was given to commercial prosperity, and railroads, especially, were denounced and there was a general financial gloom, that we did not share the common despondency; we upheld the hopes of our readers, and pointed them to a brilliant future. Time has already proved the accuracy of our views. But, not to the extent that will be evident, in a year or two more. Great losses have been entertained, by some persons, and a great vacuum had to be filled by solid gold, before the financial world could feel on its surface, and through all the main channels, the repletion, the surfeit of solid money, which California and Australia have been pouring out into the great streams of money. But, the time has come, in which this is to produce its full effect; and we shall note for our readers what seem to us the signs of the monetary world.

1. MONEY AND CREDIT.—We believe it is about eight years since the first full crop of gold was raised in California. Since then it has produced about fifty millions per annum. Within the last three or four years, Australia has produced about two hundred millions; so that we estimate that *six hundred millions in solid gold* has been added to the ordinary supplies of that article. According to the received rules of commercial credit, this was equivalent to *eighteen hundred millions in credit!* This is an enormous amount, added to the general commercial exchanges. Why, it may be asked, has not this already produced a surfeit? There were three reasons, quite sufficient to delay a result, which must at last come. First, commerce was, at that very moment, by means of railroads and increased exchanges, greatly extended, and thus required new resources. The first gold from the new supplies merely went to supply the new avenues of commerce. There was an increase on both sides. Secondly, there was a period of war, between three of the greatest and most commercial nations of the earth, and war always interrupts the ordinary channels of commerce, and exerts a new species of demand, in the shape of government loans. This has ceased and money will now be required only for the legitimate purposes of commerce.

Thirdly— a greater reason than all, why this flood of gold did not seem, at first, to produce much effect was, that when it began to come, the financial world was in a perfect drought, for want of the precious metals. The supplies of silver in Mexico and South America had been nearly exhausted. Of gold, except in



the Ural mountains, the same may be said. In this condition of affairs, the great reservoirs and channels of money must be filled up, before the general diffusion can be much increased. Our readers have often seen this same effect, where after a drought, there has been a heavy rain. At first, it seems, that the rain disappeared. The earth sucks it up; and there must be a long rain before the dry pools and channels are filled up. When it has rained some time, then the water appears on the ground, the leaves uphold the drops, and all nature rejoices. Something like this has been the effect of the new and great gold supplies. The vaults, the banks, the governments had to get their supplies of gold and credit replenished and filled up, before the minor channels could begin to show their effects. Unless we are greatly mistaken in the signs of the times, the period is at hand when all the smaller channels of money will be filled also, and money can be had on much easier terms. If any money holder wants to get 10 per cent. he had best discount the bonds or notes very soon. We have no idea that the rates of interest can continue what they have been. We have not the least notion that a really good R. R. Bond, bearing 7 per cent. interest is to be sold at 75 per cent. much longer. Indeed, it is very problematical, whether capitalists can command 7 per cent. much longer on any tolerable security. It is hardly possible that money should remain at a high rate of interest, when there is such an enormous supply of precious metals coming in. It would be contrary to any philosophy of commerce with which we are acquainted.

Nor is this all. The supplies of silver will very probably be increased as largely as those of gold have been. It is the utter imbecility and ignorance of the Mexicans and other people of the American tropics, which has diminished the supply of silver. Great and rich mines are known to exist, which for half a century have scarcely been worked, but which will pour out their wealth when the Anglo-American lays his hand upon them. We wish our readers to remember what we say upon this point; not that we would prophesy anything, but that we would point the way to the new and great resources yet to be developed on the American Continent.

2. OF THE CROPS. Looking to what we both see and hear of the crops, we do not believe that the cereal crops will be anything more than, if they are up to, an average crop. We speak of the whole country. With an average crop, we have no great deal to spare Europe, and it is no great matter whether there is a large demand there or not. The rapid increase of population in our country, the great diversion of labor to railroads and other mechanical pursuits, will operate to equalize the supply and demand in our own country. We shall probably have an abun-

dance at home and that is all that is required for the prosperity of the country.

On the whole, we believe that the financial and commercial aspects of the country all tend towards a high degree of prosperity.

#### McDANIEL & HORNER'S LOCOMOTIVE AND CAR SPRINGS.

We are pleased to find in the *American Railway Times*, the following notice of the establishment of these enterprising gentlemen. The *Times* says:

"The locomotive and car springs manufactured by this house stand deservedly high in the estimation of railway managers. The high position which the manufactures of this firm occupy, comes legitimately enough from some forty years of intelligent and conscientious experience. The senior member of the firm, John McDanel, Esq., commenced the business of manufacturing springs for coaches over forty years since, and rapidly took the lead in that department of useful industry. When our railway system was commenced, they commenced the manufacture of locomotive and car springs, and up to this time their springs stand unrivaled in the American market. Mr. E. Horner, the junior partner, served an apprenticeship at these works, and from 1828 has given his entire attention to this department of the work. From small beginnings the concern has enlarged until it now employs regularly from forty to fifty hands, entirely in the manufacture of springs. They use up a ton of steel per day; their forges and tempering furnaces being arranged exclusively for this work, and they use none but the very best material. The American steel is made from the best Swede iron, and the English steel is likewise of the first class. They manufacture their springs from American, English, or cast steel, just as those ordering may prefer, and when these articles are delivered, confidence may be felt that they are of the very best quality.

In giving an order for springs, the manufacturers only require the length, width and curve over all of the springs, with the amount of weight which it is desired each spring may bear when fully loaded; and the springs, when finished, will fully conform to each and every requirement. The manufacturers temper and test each spring by a suitable machine, capable of giving a pressure of from 100 to 20,000 pounds, and any defect in temper or capacity is readily noticed and detected. From the vast amount of work which this firm turns out, the public have a pretty good idea of its merits, and if anything more were needed, the references to the first locomotive and car builders of the country, and a great many railway managers who have used their springs, is sufficient to show in what estimation these springs are held by those most competent to judge. Among those who have testified to the character of Messrs. McDanel & Horner's

Springs, are the Messrs. Norris & Sons, Locomotive builders, who stated that "we have much pleasure in stating that they have given entire satisfaction, and we have found them, upon trial with those made by others, to be superior in the essential qualities of elasticity and durability, combined with lightness; the result of employing the best material only, and having it properly manufactured. We are using them exclusively under our locomotives and tenders, and can with confidence recommend them as being superior to any we have yet met with."

The late Superintendent of the Philadelphia, Wilmington and Baltimore Railway, states that that company have used these springs for some years, and that "he takes pleasure in saying that they have always given entire satisfaction. Their durability and elasticity are superior to any others that we have used, and can confidently recommend their make of springs to all railroad companies and others who may want a good article."

The master machinist of the Macon and Western Railway says: "This company have used the springs made by your firm for several years, under engine, baggage and freight cars, and have found them superior to any I have seen." And they have a great mass of references and vouchers from as respectable and competent parties, who all concur in giving the very highest character to the springs manufactured by this firm.

#### THE WORLD'S HIGHWAY.

We subjoin an article, under the above caption, from "Heraclitus's Railway Journal" of May 31. It is a fitting comment on the inaction which has hitherto characterized our legislative bodies in this, the most important subject now before them. The "Journal" says:

Such is the title given to the greatest and most important project for a railway ever conceived. Mr. Macdonald Stephenson, the father of Indian railways, proposes the construction of a line which, with others already completed or in course of construction, will form a railway from Calais to Calcutta, or from London to Lahore, with but two breaks, one at the Straits and one at the Dardanelles.

The route generally would be from London via the Southeastern or Southwestern railways through Belgium or France, by Munich, Vienna, Pesth, Belgrade, Constantinople, by Iskil, Malatich, Mesko, Bagdad, Bussorah, through Persia and Beloochistan, by Kurra-chee, Bombay, to Allahabad, thence to Calcutta on the one hand and Lahore on the other, the terminal branches to the world's highway being the partially completed East Indian Railway, itself one thousand miles in length.

Lord Dalhousie, the enlightened Governor General, approving of the plan, thus expresses himself in January last, respecting it—

"This great project is, of course, in the merest outline at present; but such an undertaking once completed, and reducing the distance between England and her dominions in



India to little more than ten days' journey, would prove of vast national importance, and would be a great step in the progress of the world."

"A great step in the progress of the world" undoubtedly it would be, and, therefore, difficulties of no ordinary magnitude present themselves to its accomplishment; but they are only such as the untiring energy of the successful Indian railway projector, time, and capital, may overcome.

At present, no definite plan of the gigantic line has been produced; but it is nevertheless a project, and not a visionary idea, deliberately proposed by Mr. Stephenson, and warmly approved by the highest authorities in the principal countries through which the line would pass; all regarding it as one of the greatest and most beneficial works for the world's interest it is possible to imagine.

Though in one section it "crosses pathless deserts, passes regions inhabited only by tribes whose hand has been against every man since Ishmael became a warrior," the mind of Mr. Stephenson sees clearly difficulties even such as these overcome by time and capital, and the Englishman's energy and enterprise. The length of the line to be made is 3,405 miles, at an estimated cost of thirty-four millions; but inasmuch as the distance from Kurrachee to Bussorah could be well performed by steamers, about 1,900 miles of railway to be made, would render the route practicable at a capital cost of about twenty millions, on which the existing through traffic carried by one steam navigation company alone would, it is said, yield a moderate rate of return. But there is very little doubt that were so grand a trunk line of railway made between England and India, at a cost of £10,000 per mile, that the profits would be enormous in relation to the outlay. The Panama line, though not cheap, pays.

The railway system from London to Belgrade, forming part of the intended great trunk from England to India, is already completed, and the extension from Belgrade to Constantinople about to be constructed.—Thus a considerable portion of the railway in contemplation is made.

Roughly estimating the expense of the proposed England and India Railway at as high as forty millions, it is about one-ninth part of the capital actually spent on British railways. It would only amount to the capital of one of our English railway companies.—The capital of the London and Northwestern Railway is little short of forty millions. "The trade which built the cities of the Mediterranean; the trade which half supports England; the trade to obtain a share of which America discusses plans almost too gigantic for the imagination, must be carried through this one artery. That the artery will be full is perceptible without more words of ours." Twenty millions in the first place, and forty ultimately, may be well and profitably spent to gain such a railway, destined to carry such a traffic; that will reduce the journey from England to India to ten days; and moreover perform the important service of rendering the hold of England on India more secure.

England may indeed build her "World's Highway," and it will be a mighty monument of her energy and her enterprise—a monument more enduring, humane, and beneficial than ten thousand Crimean wars. It will be, too, a work of great importance in a commercial and political point of view. But if our peo-

ple are wise enough to build at once our great Pacific R. R., our enterprise will stand before the world in a far different light from this tremendous European project. It will pass thro' the domains of a score or more of petty princes, the rod of any one of whom would interrupt for a time, at least, the business of the world—while ours will stand out as one grand connected chain, spanning from ocean to ocean, and enriching the broad domain of the one nation freest and happiest on the globe—a nation whose motto is peace, but war never finds her unprepared. This will give to the Pacific Railroad a superiority which cannot be too highly estimated, and which will make it pre-eminently the "World's Great Highway." Let our government, then, see to it, that this great project does not languish for want of that pittance of aid and encouragement that is asked of it; and above all, let our present legislators do the work before the ballots of another election shall have condemned their unwise delays.

From the Cincinnati Price Current.

#### COTTON SEED OIL, AND OTHER PRODUCTIONS OF THE REFUSE OF THE COTTON PLANT.

In an article, which we published in our paper last fall, we stated that the manufacture of Oil from Cotton seed had been commenced by the proprietors of one of our oil mills. The business is being carried on very successfully, and the oil is coming into general use.

Edgar Conkling, Esq., one of our enterprising citizens, has now in operation a series of successful experiments, not only in reference to a new and simple mode of extracting the oil in its pure state from cotton seed, but as regards the application of the residue of the seed, after the oil is extracted, to other important and useful purposes. The matter is fraught with importance, and if Mr. Conkling's theory contained in the following communication which we find in the New Orleans *Picayune*, be correct, and of which we can have but little doubt, we hope it will be fully developed in this city. We have the men and the capital to do it, if it can be done, beyond a doubt.

Mr. Conkling says:

"I am satisfied that the value of cotton seed fibre; of oil that may be made from the seed for burning, lubricating and perhaps painting, and for soaps of the refuse cake for distilling, feeding cattle and hogs, manure, and even for gas, is equal in value annually to that of the cotton crop. It is a subject I have given a good deal of attention to. Soap may be made directly from the seed by boiling it in the alkalies; oils may be extracted in a pure state, with a full yield and free of coloring matter, without the costly method of compression; and when extracted the seed may be distilled, as it has the essential properties, containing 11 per cent. of grape sugar, thus displacing so much grain of use for food. The *Railroad Record* of this city lights its office from gas made from cotton seed cake. The seed itself is richer for the purpose.

"No one item of residue, going to waste in this country, will compare in utility and value to cotton seed; and, with a little attention on the part of those interested and capable of appreciating it, the South in a few years may reap fifty millions annually of net receipts from working it up. A recent number of the *Scientific American* says that when cotton sold for six cents per pound, a large

amount of it was used for making paper. The waste cotton fibre is equally as good for this purpose, and can be secured by the use of machinery, as reported by me in the May number of the *Tennessee Farmer and Mechanic*. In paper, oils and soap, the South can thus beat the world in quality and value, if it choose."

The *Picayune* appends some remarks, as follows:

"Our readers are already aware that a company has been established in this city for the purpose of manufacturing rope and yarn from the fibres of the bark of the cotton plant. The terms of the charter of the manufacturing company leaves it open to them to devote their attention to other branches of manufacture also; and it would appear peculiarly fitting that they should enter upon such as may spring from sources so closely allied to—nay to a certain extent identical with—that to which they have particularly resolved on attending. We would therefore invite their attention to the enormous revenue which it is alleged upon apparently conclusive grounds, may be netted from produce of the cotton plant at present thrown away as refuse.

"The seed produces, as Mr. Conkling says, one of the most valuable oils, both for illuminating and lubricating purposes, ranking in both respects equal to sperm oil. The proportion it yields is said to be 30 per cent. and the 70 per cent. residue is all good oil cake. The total quantity of seed being 3,239,800,000 pounds, the oil produced would amount to 671,940,000 pounds, the oil cake to 1,567,860,000 pounds. Estimating the value per pound of the oil to be not more than that of the cheapest grease, it would be worth \$67,194,000, and valuing the cake at one-half the rate at which other oil cake sells, that would be worth \$7,839,300.

"Here, then, estimating values at extravagantly low rates, we have a revenue of \$135,000,000 literally being thrown away yearly. Allow that one-half of it—a preposterously large proportion—should be swallowed up in the course of manufacture, and still there would be sixty-five millions and a half left for net profit.

"The Manufacturing Company have already directed their attention to yet another product of the cotton plant, as we commenced by remarking; but it appears that this, too, is extremely valuable for paper making purposes, as well as for those to which they appear more particularly intending to direct it. We would invite their attention, as well as that of our readers generally, to the subjoined remarks from the New York *Day Book*, on this point:

"Specimens of the bark stripped from cotton stalks have been exhibited to paper manufacturers at the North, and were considered equal to good rags worth six cents per pound, or about \$120 per ton, and were pronounced the best substitute for rags of any raw vegetable material known to the trade.

"The magnitude of the paper business may be conceived when we take into consideration that there are 750 paper mills in the United States, employing 3000 engines, and which produce annually at 10 cents per pound, \$27,000,000 worth of paper. To manufacture this amount of paper requires 405,000,000 pounds of rags, 1 1-4 pound of rags being necessary to produce one pound of paper. The value of the rags at the average of 4 cents per pound, amounts to \$16,000,000, to which, if the cost of making them into paper, including 1 3-4 cents to each pound of paper in labor, with wastage, chemicals, &c., be added, would swell the cost to \$23,625,000 to produce \$27,000,000 of paper, leaving net profits on the total manufacture of \$3,375,000. For the year ending the 30th June, 1855, we imported 400,000,516 pounds of foreign rags, from twenty-six different countries. Of this amount Tuscany, in Italy, supplied 14,000,000 pounds. Two Sicilys 6,000,000, Austria 4,000,000, Egypt 2,446,928, Turkey 2,446,828, England 2,591,178. The total value of the 400,013,516 pounds imported was \$1,225,150. The manufacture of paper has outstripped the supply of materials, and rope cuttings, hemp waste, and other articles have been resorted



to, but the supplies of all have been insufficient to meet the demand, and prices have been steadily on the advance. It is possible that the cotton fields of the South may supply an almost inexhaustible supply of hemp, so that hereafter we shall reach the great desideratum in modern civilization, an abundant and cheap supply of paper.

#### BRUNSWICK AND FLORIDA R. R.

*Report of the President and Directors to the Stockholders, at their Annual Meeting, in the City of Brunswick, May 15, 1856:*

#### CONCLUDED.

A branch road from some point on the line of the Brunswick and Florida Railroad, between Thomasville and the Allapaha river, will enable us to reach Albany, in your own State, and Eufala, in the State of Alabama; and thence, by the way of Montgomery and the railroads now under construction, we shall be brought in direct connection, by rail, with the Mississippi river, at Vicksburg. The distance has been computed at 600 miles. From Vicksburg a railroad is now in process of construction to Shreveport, in Louisiana, which connects with the Pacific Railroad. Any one conversant with the course of emigrant travel must perceive that this will be the great route for that travel to Texas and the gold fields of California. Emigrant ships will sail from Europe direct to Brunswick, and take return cargoes of cotton, corn, or timber. The Altamaha and the St. Illa rivers, and the line of the Brunswick and Florida Railroad, will furnish for years an abundant supply of the choicest yellow pine which can be found within striking distance of the seaboard.—With the certainty which the railroad and these rivers give the ship-owner of a return freight, comes the certainty of the emigrant ship, and the European manufactures and freights destined for the South and West. They must come to Brunswick.

A charter has been granted for a railroad from Macon, Georgia, to Brunswick, or any point on the Brunswick and Florida Railroad. It is probable that this junction will be effected, so that the distance from Macon to Brunswick will not exceed 191 miles. At Macon the railroads leading from Memphis, Cairo, Chicago, St. Louis and Cleveland, can be concentrated. The port of Brunswick is about the same distance from Cairo, by rail, as Raleigh, in North Carolina; Cumberland, in Maryland; Pittsburg, in Pennsylvania; and Ashtabula, in Ohio. With a healthy port, and harbor possessing the pre-eminent advantages that Brunswick possesses, it is reasonable to expect that some portion at least of the trade destined for Europe, and centering at Memphis and Cairo—two most important points—should be sent to Brunswick for shipment, instead of New York. What inducement can Baltimore or New York hold out to convey freight for shipment to Europe, over the railroads from Cumberland, Pittsburg, or Ashtabula, when the same freights can be laid down at Brunswick, on the Atlantic, in the same time and at the same expense required to reach the three points above named—while the time and cost of transportation from Cumberland to Baltimore, Pittsburg to Philadelphia, and Ashtabula, on Lake Erie, to New York, would be added to the time and expense required to reach Brunswick.

We confess it sounds harshly in our ears that this language of eulogy on the powers and resources of your State should come from strangers' lips; yet these things are not now for the first time revealed to you. They are

impressed on the minds and engraven on the hearts of many men now present who know the high destiny which awaits their State, and who have demonstrated that they do both know and appreciate it. On the last memorable occasion of our gathering here, the committee of southern stockholders, responding to the address we then made to them, said:

"We should be recreant to ourselves and derelict to our duty as Georgians, if we were not willing, yea anxious to join our friends in building the Brunswick and Florida Railroad. We hope that past bickerings and discontents will be forgotten; that we shall no longer hear of betrayed confidence; that we shall no longer be disturbed by any supposed antagonism of interest and feeling between northern and southern stockholders; that this company will be regarded as a unit, governed by one common motive and one common interest; that our motto will be "onward"; that we will surmount every difficulty, and that we will and must succeed."

"That every feeling of patriotism, pride, and interest, will force us to aid, to the full extent of our ability, in the completion of this great work; and that we have every confidence in being able to do all, and even more than has ever been promised from our section of the State, to-wit: to raise a subscription between St. Illa river and Thomasville to the amount of \$600,000, and on the Albany Branch a subscription of \$300,000, making a total of \$900,000 in means immediately available for the construction of the road; and that, with contracts for work and materials payable in stock, a much larger amount may be expected."

Such was the language, at that day, of some of the most prominent citizens of your State. And now, men of Thomas and Lowndes, Baker and Lee, of Ware and Clinch, and Decatur, we rejoice in your personal presence here, as responding to these pledges. What were they? They meant something—or nothing. What shall we say? Were they no more "than sounding brass, or a tinkling cymbal?" No, no, a thousand times no. They meant that when we had so far justified our good faith towards you as to put the road to the west bank of the St. Illa river, where it strikes a region of country possessing in rich abundance many of the material elements of wealth and power, you would put your own hands to the plough speedily, steadily, heartily. That the road *does* strike such a country, you have given your concurrent testimony—for, in the address from which we have cited, you say: "The character of the soil and the healthfulness of the country through which this railroad is destined to run, is unsurpassed by any other portion of Georgia." Knowing the sincerity of our own purposes, we have not been willing to throw a suspicion upon yours. Through the trials and temptations of the past year, your people have stood firm to our standard, when the friendship of others has seemed to be shaken; and we will never requite the confidence you have reposed in us by a treacherous surrender of your interests and your rights. Our course is clearly, distinctly, luminously marked out. We go to the Gulf of Mexico by the way of Thomasville, and branch to Albany.

Nor has this well-considered determination been in any degree impaired by the ominous prophecies which are abroad in respect to the exclusive legislation of our sister State of Florida. In the growth of nations and of States, ages are but years; and the narrow

restriction of to-day is succeeded by the liberal and enlightened policy of to-morrow. Trade, like capital, will follow its own unerring instincts; and if the public mind of Florida should at this time believe that her material prosperity will be best promoted by surrounding herself with an imperial Chinese wall, having only a gap here and there, for the admission of a few favored interests, we see nothing to discourage us in that. Time will fulfill his mission. The schoolmaster will assert his sovereignty in Florida, as he has asserted in the confederate States of the Union. His voice cannot be stifled. It is heard in every vibration of the magnetic wires—in every puff of the locomotive—in every revolution of the paddle-wheel that strikes the waves of the ocean or ruffles the surface of our rivers. And we do not doubt that the people of Florida, in their own good time, will place her destinies in the hands of men whose grasp of mind is large enough to comprehend their wants, and meet the requirements of a liberal and progressive age.

In thus openly declaring our plans, we do but echo the sentiments of the resolution adopted by the Board of Directors, on the 25th of April, in the words following:

"Resolved, That the good faith and the true interests of the Brunswick and Florida Railroad Company imperatively demand its adherence to its own line of road, as now designated, between Brunswick and Thomasville; and that, imposing implicit confidence in the pledges—so solemnly given and so earnestly repeated—of abundant material aid from the people of the conterminous counties, this company does hereby pledge itself to maintain that line without essential deviation or change."

And this is the chart of our voyage. People of Georgia, will you travel with us?—Choose ye this day.

C. F. WELLES, Jr., Pres't.

The reading of the Report having been concluded, Mr. Charles Day moved that it be adopted. Col. J. L. Seward, after a few brief remarks, seconded the motion; and the question having been put, the Report was adopted unanimously.

The President announced that he had closed a contract for the grading and bridging the road from the St. Illa river to Big Creek, 18½ miles; and that he had also closed a contract with twenty-one gentlemen from Thomas and Lowndes counties, for the grading and bridging of the road from Big Creek to the Allapaha river, a distance of 53 miles—all payable in stock, being in compliance with former pledges and subscriptions made to this company; and thus securing the completion of the road for 100 miles from Brunswick within the next fifteen months. The President also stated that he had positive assurances from the gentlemen from Lowndes and Thomas, of their willingness and determination to grade and bridge the road from Allapaha to Thomasville, upon the same terms—payment to be made in stock of this company, as heretofore subscribed.

The President also stated that he had received assurances of gentlemen from Albany and vicinity, of their willingness and determination to grade and bridge a branch line from the main line to Albany, as soon as the main line was so far advanced as to warrant the commencement of the work, in compliance with their subscriptions to our stock, and with pledges heretofore given.

Ample evidence was thus given of the good feeling existing towards our road, and of the



firm determination of the people along the line to give ample material aid towards grading and bridging the road to Thomasville and Albany, in compliance with their former subscriptions and pledges.

The stockholders then proceeded to the election of Directors for the ensuing year, and the following ticket was elected by unanimous vote.

C. F. WELLES, Jr., of Penna.  
SAMUEL J. BEALES, of N. Y.  
HENRY S. WELLES, of N. Y.  
CHANCY VIBBARD, Albany, N. Y.  
GEORGE E. GRAY, Albany, N. Y.  
LEVI J. KNIGHT, Georgia.  
HENRY G. WHEELER, N. Y.

The meeting then adjourned.

MICHAEL YOUNG, Chairman.

The Board then met and elected the following officers for the ensuing year:

President, CHARLES F. WELLES, Jr.  
Vice President, SAMUEL J. BEALES.  
Treasurer, HENRY S. WELLES.  
Secretary, HENRY G. WHEELER.  
H. G. WHEELER, Sec'y.

### CONSTRUCTION OF RAILROADS AT THE SOUTH.

We find the following sensible suggestions as to various points of construction of railroads, especially at the south, in the Alabama Planter:

MESSRS. EDITORS—I hope this subject does not so exclusively belong to science, as to cause the remarks I propose to make to be considered as presumptuous. They are certainly not so intended, though freely given. The location of the track way, the leveling, grading and construction of bridges and tressels, and the proper radiation of curves, with the results to be found in the books within the range of scientific men to know, give authority to their opinions which we should all bow to. There are other matters of equal importance that are more dependent on the experience and the observation of the men who have devoted their time to it as a part of their business. The overflows of our rivers and creeks, owing to the heavy rains we are annually visited with, and the duration of timber under various degrees of exposure, are matters more within personal observation. Our large river at Montgomery rises in a few days to upwards of sixty feet perpendicular, while at our wharves it only rises the same number of inches. This, true of the river, is in a measure true of the creeks, and where they are long, and the undulations of the country drained are great, they give temporarily a resistless torrent that must sweep every thing before it, unless your works are so planned as to give it a full passway. The width of the swamp is the creek of high water, the creek proper the measure of low water. Experience seems to say that the first step in crossing them would be by bridges or tressels to provide a sufficient passage to the flood and all attempts to confine it to the creek proper will be ineffectual. Experience also teaches that embankments should run as little with the course of the current as possible, as it will be difficult to save them from the abrasion and destruction of the current. I have seen nothing better than a coat of joint-grass, that is, if compelled to such course, so easily procured. The form of embankments should be hemispheric, and the more usual course of dropping the earth on the top and relying on the form that itself takes, is not sufficient.

The first flood that lies against the bank will percolate through it and dissolve the lumps, and, when gone, the earth will settle down and widen the base, and the top, for want of support, splits and falls on each side and the bank is gone. This has come under my personal notice many times. I think the levees should be wider by two feet than the rails so as to cover well the end of the cross-ties to preserve them, and to give safety from heavy rains washing under them. The best timber for durability, and the best situation to place it in for lasting, are not matters of very certain information. The chestnut and the locust we have none, and the red and white cedar or juniper, though more abundant, and the latter too spongy when dry, are both in too small quantity. The black cypress is the very common and abundant growth of our creek swamps, and where solid might answer for cross-ties over swamps or for posts or piles for piers or bridges. The common red cypress is abundant in the larger swamps, and the old trees split into heavy pieces will do for cross-ties or such other purposes as the black cypress. The most valuable of all and most used, is our common old yellow pine or its lightwood; the grain is close and the wood durable. Lightwood, by the grain being full of a resinous gum, resists moisture, and being most durable, may be used in special places. Where timber can be so placed as to exclude air it will last a long while, and, under some circumstances, forever. Under water is best; in mud, though thinly covered, it resists decay well, and in dry earth, accessible to air, it rots fast, and such unfortunately, is necessarily the manner in which most of it has to be used. Where covered only a little it lasts better, and where much walked over the surface becomes closed, and better excludes the air; and, therefore, about stations and under used roads, it ought to last a little longer. It will be better to look to it occasionally and cover over exposed places. The ends of cross-ties every where, but especially on high embankments, being liable to wash under from rains, and as sodding would be expensive, a slip of the joint or Bermuda grass dropped on or between each, and nature would soon do the rest. Cross-ties laid on the surface for the alternations of wet and dry are in their most perishable condition. Our road embankments, like the levees against the river, must be settled by water before they are safe, and their occasional destruction is the condition of all new roads, and not the fault of the constructors. All curves in roads are to be avoided if possible without much cost of labor. The weight of the car and its load of some fifteen tons or more presses outwards heavily on one rail, and unless the cross-tie is sound and the spike holds the rail well, it is forced out and the car falls in. On the contrary, if the track was straight and both rails level, there would be a perpendicular and no outward pressure, and the car would go safe even if the cross-tie was rotten. It is important that the rails should be strictly level, for if there are inequalities, however small, each car comes down on them with the force of a heavy blow, increasing the inequality and straining the journals and boxes most injuriously. It is difficult to keep this level exact; the Engineer may make it perfectly so, and from the different degrees of hardness of the ground, from rain, or otherwise, in a week one part of the cross-ties may sink more than another, and the car again adds to the inequality. The roads that I have generally seen in the Northern States are

firmer and harder and the ties stand their place better. I think, taking into consideration the softer condition of our roads, their more easy saturation with water and the great cheapness of lumber and the greater ease of repair, that the iron should be laid on sawed string pieces. The pressure on a twenty feet rail on eight cross-ties would be more equal and the track not so liable to sink into irregularities. The cross-ties would be better covered and safer from rot by the more complete covering, but the more important matter is the convenience of repair. One defective string piece may be removed and another substituted more easily and better than to take out a cross-tie and push another under, always disturbing and loosening the old bed of it. Sawed pine timber 8 by 10, 7 by 9, or 5 by 6 inches, 20 feet long, would use but little lumber. If the last it would be but 26,000 feet to the mile and cost two hundred and sixty dollars. Our practice is taken from what is correct practice elsewhere, but the texture of our soil does not suit it. These strings on straight lines are confined by bolts or spikes; on curves they may require being put in mortices and the wedge and used only for short distances. You will soon get the price of the lumber repaid in saving your journals and boxes, and the endless time of your Engineer and hands in keeping the track to a strict level.

I have thus attempted to show that in a road passing over our many creeks and swamps, liable to high rises and heavy freshets, care should be taken in leaving a passway for it, and that the breadth of the top of the embankment should be a little wider than the cross-ties, for more safety and for better security from rot, and that the form should not be like the rafters of a house, but more hemispheric, and that as our roads are not so hard as the granite roads of the Northern States, but soft and liable to become more so by every saturation from rain, and lumber is both cheap and convenient, that the iron rails should be laid on string pieces of wood.

A PLANTER.

### VIEWS ON THE PACIFIC R. R. QUESTION IN 1849.

We give the following extracts from a paper written by Col. Abert in 1849. It is an interesting document as embodying views which time has proved true. We bespeak for it the attention of our readers.

Railroads are to be made over any of these routes, but better and at less cost over the Panama route than over any other.

But now come other very important questions. If we encourage our citizens to expend their money in the construction of railroads or canals over any of these routes, do we not create a moral guaranty of their rights? Would we not be obliged to protect these rights if violated or invaded? Could our government resist the clamor which would be raised on the violation of these rights? And do we not thereby, in the encouragement given, to use an old fashioned phrase, buy a law suit? And may not the prosecution of this law suit be an excessively costly affair?

These are important questions in my judgment, deserving of the most serious consideration.

It cannot be denied that any means which increase our facility of intercourse with our distant "provinces" of California and Oregon are important in their political consequences, and are necessary to the binding of these pro-



vinces to the Union. On these accounts all the several lines of intercourse are matters of importance to the United States; matters, it may be said, of vital importance, politically and commercially, and more so to us than to any other nation. But, inasmuch as our encouragement of these projects may entail upon posterity an expensive "law suit," it becomes matter of serious consideration, if all these advantages may not be secured more effectually by some other mode, considering the probable consequences of such a "law suit" may also be secured at a far less cost.

If means of facilitating the passage of any one of these routes were to be accomplished, it is vain to suppose that we should enjoy its advantages without rivalry. This rivalry will lead to collisions. These collisions will require a large and active marine force to protect our trade, and, as an inevitable consequence, the law suit, a war, will follow with some European power. Now, if the cost of such a war be counted in life and treasure, it will be found to far exceed the cost of some means of intercourse which should be free from such consequences.

As preliminary and temporary expedients, these railroads at Panama or Tehuantepec, will without doubt, be highly beneficial, and individual enterprise, exempt from guaranty on the part of our government, might be allowed freely to exercise itself. But such measures should be viewed only as temporary, and it should be a *sine qua non*, in my opinion, that our government should not lend either its moral or fiscal aid, except in favor of some project that should be entirely within our own soil.

I am here reminded that we have already passed beyond this limit, in the treaty with New Grenada of the 12th December, 1846, in which we have gone fully into this matter of guaranty; and I also know it to be the opinion of sound minds that the time is rapidly passing in which we shall have any cause of anxiety about the interference of Europe with American affairs. If this be so, then I have expressed myself with more anxiety than the subject required. But the vista of futurity opens to my view a severe but probable contest about commercial supremacy. These routes across the isthmus may provoke and hasten that contest, whereas a project or route within our own soil would be equally advantageous to our commerce, is of the strongest necessity politically, and would be exempt from those causes adapted to disturb our quiet.

Fortunately, such a project is within our power, which will not only accomplish a junction with these distant provinces in vastly less time, but at a vastly less cost, than would be encountered by any of the other projects and their probable consequences.

I allude to a direct and continuous railroad from the Mississippi, through about the middle of Texas, and by the valley of the Gila to San Diego, on the Pacific. Such a road, at the moderate average speed of 20 miles the hour, would carry its train from the Mississippi to the Pacific in less than four days.

From the Rio del Norte to the Pacific, about 800 miles, is now the frontier line of the United States. Upon this line military posts will have to be established; arms, clothing, provisions, munitions of war will have to be transported. A road will therefore have to be made, for we cannot suppose that our government will persevere in the shockingly absurd and expensive mode of maintaining such a transportation on the back of

mules. A road, then, will have to be made—a military road for military purposes—for government purposes. This road will not, of course, be closed to our citizens; it will be open to all traffic and traveling. This military road, then—this road essential to the defence of that frontier—will become, of necessity, a commercial as well as military road. The only question which can be raised in reference to the road is, what kind of road shall it be? Common sense will readily answer this question by saying, the road shall be of that kind which admits of the greatest speed and the least cost of transportation. Such a road would be the most efficient for military as well as commercial purposes; and such a road is a railroad. That is, after having graded the road and made the road bed, the most rigid reasoning of economy would be consulted by laying rails upon it.

The consequences of such a road are immense—they probably involve the integrity of the Union. Unless some easy, cheap, and rapid means of communicating with these distant provinces be accomplished, there is danger, great danger, that they will not continue parts of our Union. Then what will become of our great moral power, our great commerce, our infinite resources, &c., &c.? We shall sink into two second rate governments, if we are even able to maintain as good a position as that of second rate.

The great moral opinion of this country is in favor of union from ocean to ocean; and it will be found ready and on the alert to second any sound proposition by which that union will be secured. So strong, so universal, so enthusiastic is that opinion, that even wild and untenable projects are countenanced by it. No danger, then, that popular support will be wanting to sound and well digested projects. But there is danger, I think, that this opinion would visit with serious indignation the men who should be opposed to any such project.

It is generally admitted that, in the present condition of California and Oregon—I mean in reference to delays and difficulties of communication—they cannot be expected to remain as parts of our Union. What, then, is the remedy? Is it not to remove these difficulties and delays? Certainly, you will say. Well, then, what method so effectual, so certain of success, as a railroad? It is not a mere question about a road; it is a question about our Union—a question upon which our greatest statesmen may well expand their strength, and hope for anything as they befriend it; aye, and fear everything as they are found to oppose it.

But what, you may ask, are my particular notions about this road, its trace, &c. I will briefly explain them.

The road should involve the following general considerations:

1st. It should be as short a route as the peculiarities of the country will admit.

2d. It should be as diffusive as possible in its advantages—a main artery of the great political body, admitting of branches in every direction.

3. It should be a road for the whole year, and not a mere summer or seven months' road, with all its facilities closed for the winter.

4th. It should pass through a good soil—an inhabited or inhabitable country, possessing from climate and soil attractions to settlers, so that its advantages would be felt, and its cost be compensated in the enhanced value and occupation of adjacent lands.

5th. It should lead to our northern and eastern coast, and to our southern and eastern coast.

6th. It should take advantage, as far as practicable, of existing railroads.

These appear to me to be the general considerations, which, as far as practicable, should be fulfilled in such a road.

We will assume as the starting point on the Pacific the harbor of San Diego, because it is a frontier harbor and will have to be fortified; because it is the best harbor on our Pacific coast, that of San Francisco alone excepted, and because from this point the road is to be easily continued to any part of the coast, (through the valley of the Sacramento\*)

\*This is the received designation of the valley formed by the Sacramento and San Joaquin.

and to be made an efficient element in the defence of that coast.

From San Diego, it will have to pursue, generally, Emory's trace of General Kearny's march, as exhibited in Emory's report.

From San Diego to the crossing of the Colorado will probably be about 200 miles by the railroad trace. At this vicinity there will no doubt be a very clever town, for, at this vicinity, the railroad will have to open its fostering arms to the trade of the valley of the Colorado, and to the vast commercial resources of the bay of California, and of the southern coast of Mexico, which will, no doubt, prefer a port in this vicinity to the more exposed and more dangerous navigation of the Pacific coast of Lower California.

From the Colorado, the railroad will not be able to leave the valley of the Gila but will pursue its course in that valley to its junction with the Rio del Norte, within our boundary on that river. On reaching this point, its facilities are opened to the whole valley of that river, by boating from below, by boating at seasons from above, or by a branch railroad to Santa Fe. There cannot be much choice in the route thus far, as in that distance it is essential for a military as well as commercial road.

From the Rio del Norte the road will have to pursue its course through Texas to the Mississippi. Various notions exist about the course of the road through Texas, and we are much in want of information on this part of the subject; but keeping in mind the general principles before indicated, and calling to aid the knowledge we have of that country, I am disposed to think that, after crossing the Rio del Norte, the road will have to tend somewhat southwardly, in order to turn the Guadalupe range of mountains,\* then passing

\*It is said there is a very good route on the northern flank of the Guadalupe mountains, in a course somewhat direct from the Rio del Norte, near our southern boundary on that river, to the head of steamboat navigation on the Red river of Louisiana, probably near old Fort Washita.

through San Antonio, Bastrop, or La Grange, Washington, &c., to Nacogdoches.

By this route, the road will pass through a highly valuable part of Texas and communicate with the principal rivers of that State at boatable points, from which it will have access to the ports of this State on the Gulf by means of these rivers, or by branch roads.

At Nacogdoches will probably be the best point for the two great branches—one leading to the northeastern coast of the United States, the other to the southeastern.

†It may probably be better to have this grand junction farther back in Texas, about Washington, and from thence conduct the southern route more directly to the Mississippi.

The northern branch will probably find its better course to cross the Red river at the



great bend or its vicinity, then crossing the Arkansas at Little Rock, pursue its most direct course to St. Louis; then crossing the river, to pursue the most direct favorable course which can be obtained south of the great lakes to Pittsburg.

From Pittsburg, its connection north and east may be said to be already accomplished. At St. Louis, the road will open all its facilities to the upper Mississippi and to the Missouri and their tributaries.

From Nacogdoches the southern branch will probably take the most direct route to the Mississippi, distant about 175 miles, at a point near to and below the mouth of Red river. On arriving at this river (the Mississippi), the facilities of the road are open to the trade of that river at all seasons of the year, south to New Orleans and north to the Ohio. The crossing of this river should be by a ferry. A good steamboat ferry would be found to oppose no obstacles to the intercourse, and will admit of extension to any favorable point on the opposite side, up or down the river.

We will suppose for a moment this point to be Vicksburg: from Vicksburg to Washington by probable railroad trace is about 1,220 miles, of which 760 are already a made and used railroad; and this route has now in existence its communications with Savannah, Ga., Charleston, S. C., Wilmington, N. C., Norfolk or Norfolk harbor, at Portsmouth, Va., and other branch roads are in contemplation and being made, which will accomplish connections with other harbors of the coast, and with Pensacola on the gulf.

Now, by either of these routes, the St. Louis route or the Vicksburg route, a traveler can go from Washington, the capital of the Union, to San Diego, on the Pacific, in less than seven days; that is, about six days and a half, at an average rate of twenty miles the hour.

All will be well within our own territory—all will be under our own control. All the money expended in the construction of the road will be for the benefit of our citizens; and all those great accessory benefits of additional value to the soil, the creation of cities and towns, encouragements to emigration, &c., &c.; will enure to the benefit of our own country and of our own citizens. In a word, all the advantages of such a communication, direct and indirect, will be our own.

The road from Washington to Vicksburg will, without doubt, be soon completed, by the same kind of company and State efforts, with which existing parts have been made.

The question, then, of interest, is the construction of the road from the Mississippi to the Pacific. At a meeting held in Boston, in reference to this road, in April last, it seemed to be a favorite scheme to have one grand charter for the road.

The right of the United States to grant a charter for such purpose, within the limits of a State, would perhaps be questioned. But the right of the United States to aid the chartered companies of States for such purposes has the sanction of precedent in the United States subscription to the Louisville and Portland canal, the Delaware and Chesapeake canal, the Potomac and Ohio canal, and the Dismal Swamp canal; and in the exercise of this right, the subscription could be on prescribed conditions of dimensions and strength of road, and of privileges to transport the mail and munitions of war free of charge.

But the right of the United States to grant

a charter from the Rio del Norte to the Pacific is, I believe, without question in reference to constitutional power, as within those limits there is no organized State government; and this charter could be granted on prescribed conditions and proportional aid.

Should the course of a charter be preferred, some plan like that just indicated could be pursued.

Or the United States could make the road from the Rio del Norte to the Pacific, under numerous legal precedents of constructing military roads within territories, and there need be no fears that the connecting links from the Rio del Norte to Washington would be long delayed.

But the great question is the road. Any plan that is proper can be pursued in making it; and a great preliminary question is, the surveys in reference to the road. Upon this last, I believe there are no conflicting opinions in reference to the right of the United States to authorize the survey and meet its expenses.

#### CHEMICAL RESEARCHES ON THE COTTON PLANT.

At a meeting lately held in Washington, the Corresponding Secretary read a paper by Charles T. Jackson, of Boston, entitled "Chemical Researches on the Seed of the Cotton Plant." Having become interested in the cultivation of the cotton crop, Dr J. also turned his attention to the uses of cotton seed, the great mass of which is thrown out from the ginhouse and allowed to rot for manure. His researches show that the seed may be profitably employed in the production of oil, whilst the refuse fibre adhering to the hulls may be used in the manufacture of paper. The oil-cake may serve to feed animals or as manure. Dr. Jackson is aware that cotton seed oil is manufactured in New Orleans, but is informed that the yield of oil is very small from the unprepared seeds, compared with that from seeds that have been hulled. The analysis was confined to the seed after being deprived of the hull by Mr. Messer's patent machine. The amount of oil in these seeds was determined by extraction with either, after the seed had been pulverized and dried at 212° F. One experiment gave 38.7 per cent. of oil and another 40. The specific gravity of this oil is 0.923, (water being unity,) the same as purified whale oil. Cotton seed oil is stated by Dr. Wood to be a drying oil but the oil obtained by Dr J. did not dry. It therefore serves well for the lubrication of machinery, as well as for illumination and making soap. It may also be used as a substitute for olive oil in many cases, and be eaten on salad, as it has in no disagreeable odor or taste.

The oil-cake amounts to 60 per cent. of the seed, which was found to contain 11 per cent. of grape sugar, and 3.5 per cent. of gum, which latter is soluble in boiling water and precipitable by alcohol.

Repeated analysis of the oil-cake gave the following results.

|                          |        |
|--------------------------|--------|
| Carbon, .....            | 37.740 |
| Oxygen, .....            | 39.693 |
| Nitrogen, .....          | 7.733  |
| Hydrogen, .....          | 5.869  |
| Salts, (inorganic) ..... | 8.960  |
|                          | 99.935 |

From 3,000 grains of oil-cake 16.5 grains of ashes were obtained, which, upon analysis, gave the following results, when calculated in hundredths of the dried seed:

|  |      |
|--|------|
| Alkaline salts soluble in water, .....                             | 0.13 |
| Phosphate of Lime .....  | 50.4 |
| Potash, .....  | 0.46 |
| Soda, .....  | 0.53 |
| Phosphoric acid, with traces of sulphuric acid and Chlorine, ..... | 0.81 |
| Silica and oxide of iron and of manganese, .....                   | 0.18 |
| Loss, .....  | 0.35 |
|  | 5.50 |

The whole amount of Phosphoric acid present was 2.456, and of lime 1.340.

These results explain the value of cotton seed as manure for Indian corn, which draws so largely on the soil for phosphates. It will also be seen that the oil-cake contains nitrogen and hydrogen sufficient to afford ten per cent. of ammonia, which is a solvent, career and stimulant to vegetation. The carbon and oxygen will form carbonic acid, another active fertilizer. Some remaining carbon will form vegetable mould, which the alkalies will in part dissolve and carry into the circulation of growing plants. Indeed every element of cotton seed-cake acts as nutriment to vegetation.

#### STATISTICS OF LONDON.

London covers at present a space of 122 square miles. It contains 327,391 houses, and 2,362,246 inhabitants, the annual increase of the population being upwards of 40,000. The length of all the different streets is 1,750 miles. The paving of them cost £14,000,000, and the yearly cost of keeping the pavement in repair is £1,800,000. London has now 1900 miles of gas pipes. The introduction of gas cost £3,000,000. There are 360,000 burners in the city, which consume every night 13,000,000 cubic feet of gas, valued at £400,000, or two millions and a half of dollars.

The bankers of London have under their control a capital of £64,000,000, and the different insurance companies have a cash capital of £10,000,000, and £78,000,000 in negotiable paper.

The tax on houses amounts yearly to £12,500,000. The furniture of these houses is insured to the amount of £166,000,000.—Twenty thousand persons are constantly employed in keeping the docks in repair.

London consumes yearly 227,000 oxen, 30,000 calves, 1,480,000 sheep, and 34,000 hogs—worth, all together, £8,000,000. London consumes every year 1,600,000 quarters of wheat, 65,000 pipes of wine, 2,000,000 gallons of brandy, 43,200,000 gallons of porter and ale, 19,215,000\* gallons of water, and 3,000,000 tons of coal. It has 350 charity associations, which distribute every year £1,805,635 to the poor—which sum, when increased by private charities, will amount to £3,500,000.

The city, from the showing of its official documents, has 143,065 persons who have no visible means of support. Among these are 4,000 vagabonds, who cost the city £50,000 a year to support them. There are besides in London 110 professional housebreakers, 107 street thieves, 40 robbers, 783 pickpockets, 3,675 ordinary thieves, 11 horse thieves, 140 dog thieves, 3 forgers, 28 counterfeiters, and 316 individuals who live directly by the profits of this illicit trade, 141 swindlers, 182 people who speculate on charity with false documents, 343 receivers of stolen goods, &c.; in all 162,000 criminals, who are known to the police, and who steal every year to the amount of £42,000.

\*This probably is the weekly consumption of water.



These facts will sufficiently and satisfactorily account for the decrease in the month of May as compared with last year.

On as short notice, and as favorable terms, as by any house in the West. Every variety of

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati.



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JULY 8, 1856

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, JULY 8.

#### INCREASING IMPORTANCE OF THE PACIFIC RAILROAD.

The subject of the Pacific Railroad, already of immense importance, is daily becoming one of greater interest and magnitude. California, as a simple gold producing country, destitute of vegetation, and supposed to be incapable of culture, was of incalculable importance to the United States. The recorded sentiments of our greatest statesmen, at the time of its discovery, will abundantly prove the estimation in which it was then held; but when California became an agricultural, as well as gold producing region, it became evident that its position and importance were greatly changed. It was then no longer dependent upon the outer world for the necessities of life—it became a *self-sustaining, self-dependent* country. A third and equal, if not greater discovery has recently been made, and that is the discovery of coal. We noticed a short time ago the discovery of good workable beds of coal near San Diego, the proposed terminus of the Southern Pacific Railroad—the following paragraphs from the *Alla California* will show that it has also been discovered in other localities:

**COAL AT CROW CREEK.**—A correspondent of the *Shasta Republican*, writing from Crow Creek, an east side tributary of the Sacramento, states that he recently visited the coal bed of McCumber, Johnson & Co. twelve miles east of the Creek, and after a close examination is convinced that an immense supply of excellent quality may be obtained. The vein is described as being nearly horizontal, pitching a little to the east, and is capped with sandstone. A small ravine lays bear the vein a distance of one hundred feet in length. From the bottom of the ravine to the upper layer of coal and shale is about fifteen feet. A small shaft has been sunk seven feet, beginning at the upper strata and passes through the alternate layers of coal and shale, the last foot being coal that ignites freely in a common fire, and burns to ashes. Fifteen feet in width can now be seen, and bids fair to extend on many more.

**STONE COAL.**—George W. McCumber, says the *Shasta Courier*, has discovered a vein of coal of fine quality, about twenty miles north-east of Shasta, on or near the Sacramento wagon road. Several specimens have been brought to town which have burned with a brilliancy almost of the best cannel, and these specimens were taken from the surface.

**MORE COAL.**—We have been shown by Mr. E. A. Stevenson, one of the Indian Agents in the northern portion of the State, some specimens of coal, brought into the Nome Lackee Reservation of Indians. The specimens are very pretty and promise a rich vein of coal.

With these discoveries already made, it is altogether probable that others will follow, and that iron will yet be numbered among the mineral riches of this State. California will then possess gold, silver, mercury, copper, coal and iron—an array of mineral resources unequalled on the globe—and in addition to this is already a grain exporting country.

These are significant facts—facts which will tell on its future destiny as a portion of our Union, or on its future position as a mighty, independent nation. They are facts well worthy the consideration of our national legislature, and they give an importance to the Pacific Railroad question never before possessed. If the \$50,000,000 of gold coinage annually added to our wealth from this source alone, made California a desirable acquisition, what will it be when all its other resources are developed, and California supports its teeming millions of inhabitants; when its manufactures shall rival those of the older States, and shall embrace all that is useful and ornamental in life. For such is the plain result of the existence of the native elements which enter into manufactures. When instead of \$50,000,000 annually, California shall produce hundreds of millions of various products, which shall supply the wants of the populous nations of Asia, California will have then but little to gain from a continuance in a confederacy that wilfully ignores her greatest want; and that confederacy will have everything to lose from her withdrawal.

We ask, then, that our national legislature should meet this question as sensible men, and no longer delay the consideration of a question of the magnitude and importance now possessed by the Pacific Railroad. If the clamorous voice of the few thousand of the early settlers of this State demanded and obtained the establishment of a line of ocean steamers and the Isthmus route to avoid the tedious voyage around Cape Horn, may not the hundred thousands now to be accommodated, with equal, and even greater justice, demand a route *quicker, shorter, safer*, on our own territory—a route where their lives and property can be protected from the caprices of the half barbarous subjects of a foreign government.

Let Congress see to it that this session passes not without some adequate provision to supply this want. Vast appropriations have been made in *gold* to plough up the barren ocean with our floating palaces, and shall we hesitate to give a few acres of now worth-

less land to an object that shall cement our east and west in indissoluble bonds, with iron ties stretching from the rising to the setting sun.

But this is not a mere question of legislative policy. It has passed that point long ago. The nation calls for it in one long, loud voice. Every political party has made it a strong plank in its platform, and the people have endorsed it as their greatest present wish. We say, then, to our legislators, give us *now* a Pacific Railroad.

#### CINCINNATI & MACKINAW R. R.

We recently mentioned the government grant of lands to this road, and the fact that the termination, as we supposed, was on Traverse Bay. It appears, however, that the words of the act are, "*at or near* Traverse Bay." As Mackinaw is really *near* the foot of Traverse Bay, on the east shore, it may be safely assumed that the company will make their road to Mackinaw. This leads us to take a view of the merits of this road, and its effects on this section of country.

In 1854 a pamphlet was published entitled an "Exposition of the Plan, Prospects, Character, and Advantages of the Cincinnati and Mackinaw Railroad." This pamphlet contained a full account of all the particulars relating to the road, and we avail ourselves of it, to bring the subject before the mind of our readers.

The Cincinnati and Mackinaw Road was to be comprised of several links, which may hereafter be varied to suit the exigencies of the case, if the route here proposed be not acceptable.

|  | Miles. |
|--|--------|
| 1. Cin., Ham. & Dayton R. R., to Carlisle.....                                       | 44     |
| 2. Twin Creek Railroad.....  | 21     |
| 3. Greenville Railroad.....  | 21     |
| 4. Mackinaw Railroad, via Celina, Van Wert, Paulding, Bryan, to Ohio State Line..... | 112½   |
| 5. Mackinaw R. R., via Hillsdale and Lansing, to Mackinaw.....                       | 295    |

Cincinnati to Mackinaw.....481½

It will be observed that 285 miles of this road are in Michigan, and for much of this distance there will be a government grant. We suppose there must be at least half a million of acres included in the grant to this line, worth from two to three millions of dollars.

To exhibit the rapid growth of the northern region to which this road will extend, we give the following view:

"It follows from these facts that in addition to the great internal navigation which must concentrate, sooner or later, there must be a line of railroad crossing at Mackinaw, and connecting the peninsulas of Michigan, and



another on the other side of the strait, connecting the Canadas with the copper region, Minnesota, and the northwestern territory. But it may be answered that this is an unsettled country. It is sufficient to say that the rapidity of its growth, and the development of the mineral region is such that a railway can scarcely be completed before it will find a numerous population and growing towns at its northern extremity. To illustrate this point, so that it may be seen at a glance with what strides that country is coming into occupation, we give the growth of Michigan and Canada West in the last twenty years.

|              | Michigan. | Canada West. | Aggregate. |
|--------------|-----------|--------------|------------|
| In 1830..... | 32,000    | 450,000      | 482,000    |
| In 1840..... | 212,000   | 640,000      | 852,000    |
| In 1850..... | 397,651   | 982,000      | 1,379,651  |

"It appears that Michigan and Canada West, whose territories surround Mackinaw, are increasing at the rate of 65 per cent. each ten years; so that in 1860 there will be added to the population of Michigan and Canada West, *nine hundred thousand people*; more than both of them had in 1840! A large part of this population will concentrate on the shores of Lake Huron and the Straits of Mackinaw. It is not, therefore, too early to commence a railroad to the Straits from the Ohio valley."

Let us now extend this line from Cincinnati south till it touches on the Bay of Pensacola.

"An air line from the Straits of Mackinaw to Pensacola is 1100 miles in length, of which 450 miles are in the Cincinnati and Mackinaw line, and 650 from Cincinnati to Pensacola. So straight is the Cincinnati and Mackinaw line that it will not lose, in the whole distance, 25 miles from an air line. Run by railroad, the actual distance will not be more than 1200 miles, and can be accomplished in 50 hours. Then in two days the citizen of the north or south may traverse sixteen degrees of latitude, six States of the Union, and be carried through all the varieties of products, agricultural and mineral, which the United States produce. This cannot be said of any other line of railroad in the United States, made or projected. Considering the line as a unit, from Mackinaw to Pensacola, it cannot be equaled in extraordinary results by any other line in North America. The Pacific line across the continent will not equal it in this respect, because it will pass in nearly the same parallel of latitude, and therefore will not go through regions of such various production.

To illustrate the value of this North and South Arterial Line, by its power of producing commerce, mark, in a tabular form, the natural productions of each degree of latitude, thus:

| States       | Latitude. | Productions.                 |
|--------------|-----------|------------------------------|
| Florida..... | 31 deg.   | Oranges.                     |
| "            | 31 "      | Sugar.                       |
| "            | 31 "      | Cotton.                      |
| Alabama..    | 32 "      | "                            |
| "            | 33 "      | "                            |
| "            | 34 "      | Cotton, Corn.                |
| Tennessee..  | 35 "      | "                            |
| "            | 36 "      | Cotton, Corn, Tobacco, Iron. |

|            |      |                                     |
|------------|------|-------------------------------------|
| Kentucky.. | 37 " | Corn, Tobacco, Coal, Iron.          |
| "          | 38 " | Corn, Wheat, Cattle, Tobacco, Hemp. |
| Ohio.....  | 39 " | Corn, Wheat, Hogs, Cattle, Wine.    |
| "          | 40 " | Wheat, Corn, Hogs, Cattle, Flax.    |
| "          | 41 " | Wheat, Corn, Cattle.                |
| Michigan.. | 42 " | Wheat, Cattle, Hay, Wool.           |
| "          | 43 " | Pine, Cedar, Coal.                  |
| "          | 44 " | "                                   |
| "          | 45 " | Pine, Hemlock, Cedar.               |
| "          | 46 " | Pine, Copper, Lead, Fish.           |

This statement is enough to show a most extraordinary stimulus to commerce, on a line of railroad. The length of the entire line will be less than half of that which is proposed to be made from Cincinnati and other cities to San Francisco; yet will pass through varieties of production which that line cannot have. In two days every inhabitant on that line may be supplied, from their native source, with sugar, cotton, corn, wheat, tobacco, iron, coal, lead, copper, pine, cedar; with wool, flour, hemp, and fruits of every description; with fish of the sea and fish of the lakes; with bread, and oil, and wine; in fine, with everything that supports, clothes, or houses man; with everything which supplies his wants, or contributes to his material happiness."

In reference to the southern end of the line, we should add that the government has also made a grant of lands for that part between Montgomery and Pensacola. From Cincinnati to Covington is finished, and much of the line through the interior country is in progress.

We have now, therefore, a reasonable hope that the grand and central arterial line of railroad will, at an early day, be completed from Mackinaw in the north to Pensacola in the south.

When completed, this will be one of the most interesting and important lines of railroad in the world. No other one in the United States can accomplish such results. No other will so completely intermingle the persons and the products of various regions. It will be emphatically a Union road; one which will cement all interests, and abate all jealousies.

(From the Santa Fe Gazette.)

#### A LINE OF STAGES TO THE PACIFIC.

We have been for years anxiously awaiting at least the commencement of a railroad across the Territory of the United States to the Pacific ocean. Indeed, since the practicability and the necessity of such a road has been on all hands acknowledged to exist, there has been quite enough *wind* fruitlessly expended in Congress and by capitalists to have wafted a sailing vessel thrice from Maine to California round the Horn! This wind work has been for a long time incessantly prosecuted, and as yet absolutely nothing has been accomplished towards even a beginning—a practical beginning—of that grand, though not less useful and indispensable postal, military and commercial achievement.

Though we have always believed, conscientiously, that the true route for the great Pacific railroad lies through this Territory, or in other words over the central route, we

have nevertheless, in our desire to see the road taken through some route, and the southern route seeming to be generally preferred, long since ceased to insist on the middle route with the hope of its selection. From present indications, however, and though we believe that the construction of three such railroads will ultimately be required by the geographical extent and commercial interests of the country, we cannot soon expect the commencement, much less the completion, of any one of them. The very munificent inducement held out by the State of Texas to capitalists having for several years failed to secure the undertaking of the work, we may reasonably conclude that the railroad is a long distance, perhaps a very long distance, in the future.

If, then, we are not soon to have overland communication by railroad with the Pacific, and such communication being very necessary as it undeniably is, it becomes us to seek some other and more speedy means of attaining it. The postal interests of the government and the people, and especially of California and New Mexico, require it. And in order to afford to the people of California, New Mexico and the Western States, greater mail facilities, we think Congress ought to establish a *line of mail stages* from the frontier of the States across through this Territory to California.

The establishment of such a line, or of one from California to Santa Fe only to connect with the line already in operation hence to Missouri, may to some seem to be too expensive and too hazardous on account of the character of the country to be traversed; but such would not be the fact. Precisely the same objections were put forth as to the two States, lines now in successful operation to the but they have been proved unfounded; and as the proposed line of stages would have the same character of country in every regard to travel over, we will venture to guarantee that it would be equally successful. Similar stage arrangements to those now in use on the Independence line would no doubt equally answer for both, and the trip to Santa Fe west would be as easily and as speedily made as that east to Independence—even over the known route from this place to California, which, however, would doubtless be materially shortened and improved by subsequent discoveries on the route. Such a line, under such a conductor as Capt. Skillman, the pioneer of the present southern or Texas line could not fail to be completely successful.

We have been in the foregoing considering a line of *monthly mail stages* only, which we believe should be established—at least until a weekly or a *daily* line could be set running, or until the great Pacific Railroad is a *fait accompli*. We believe a line of daily or weekly mail stages ought to be authorized and encouraged by the government, but we are willing to accept a monthly line as an experiment, if an experiment be required. The mail stages once permanently put under way, a telegraphic line would as per consequence follow, and the one would be a mutual protection to the other. Should the government establish military posts along the line for its protection, westward-prove emigrants would settle at these posts and furnish the necessary supplies to stations, though the rich and abundant grama grasses on the road would always furnish ample support, perhaps the year round, for the stage animals. The passenger money alone, leaving out of the esti-



mate the compensation for carrying the mail, would very nearly or quite meet all the necessary expenditures of the contractors,

At the last session of Congress, Senator Gwin a zealous and able advocate of a line of mail stages from Missouri to California, in some remarks upon the importance of overland communication with the Pacific, read to the Senate a bill he intended to introduce, authorizing the Postmaster General to let out a contract for running an express mail weekly between St. Louis and San Francisco. This bill, we regret to say, owing to the uniform procrastinating propensity of Congress on the subject, was not disposed of, or at any rate never became a law. It required the trip to be made from city to city within ten days, and a failure on any account to make it within fifteen days was to forfeit the compensation for that trip, \$5000 being allowed for each trip, through and back; and three such failures after two years existence of the line, was to work an annulment of the contract. The contractors were allowed the privilege of selecting their own route, which after two years was to become the permanent legal stage route. The project contemplated also, the erection of at least five military posts along the line, at suitable intervals in the Territories, for its protection against the Indians. These, we believe, are the principal features of Mr. Gwin's plan for an express line, and in reference to it he concluded his remarks with the following observations:

"I hope this measure will receive prompt and favorable action on the part of the committee on the Post Office and Post Roads, to which it will be referred. The citizens of California and Missouri are ready to make such a contract, and have the express in successful operation in six months. They are already moving in favor of a mail stage route, and this will give them that immediate government aid which is necessary to put such a stage route into successful operation.

"The cost of this weekly express cannot exceed \$260,000 per annum, and the postage on letters weighing two hundred pounds will give the department a revenue largely exceeding the amount that will be paid to the contractors. When it is reported back from the Post Office Committee, I will demonstrate the practicability of establishing this express route, and its eminent utility. Already we have telegraph lines to Kansas, on this side, and to the Sierra Nevada, at Placerville, from the Pacific, which will shorten the time of actual communication from New York to San Francisco to eight days—as the express is required to make the time from St. Louis to San Francisco in ten days. In a short time after the express is established the telegraph will extend, and our communication will soon be brought down to six days."

In regard to a line of *daily mail stages* from Missouri to California, we will add the following speculations on this interesting subject, taken from an exchange, although our article has already exceeded the limits we can conveniently afford it in our columns.

"The cost of putting on a line of stage coaches daily from Independence to San Francisco is estimated at about \$2,000,000—thus:

|   |           |
|---|-----------|
| Cost of 120 stations.....                       | \$450,000 |
| 150 coaches, at \$500, five to start daily..... | 75,000    |
| 5000 horses, at \$150.....                      | 750,000   |
| Harness, &c.....                                | 25,000    |
| 500 men as drivers, hostlers, smiths, &c.....   | 250,000   |

\$1,520,000

"The amount of revenue that would accrue

from a year's employment of the stage line thus organized, is put down thus:

|   |             |
|---|-------------|
| 100 passengers per day (50 each way), at \$100..... | \$3,650,000 |
| Treasure \$60,000,000, at two per cent.....         | 1,200,000   |
| Insurance on the treasure, 1½ per cent.....         | 760,000     |
| Express matter.....                                 | 500,000     |
|   | \$6,100,000 |

"This is assumed to be the probable amount of revenue, exclusive of the mail transportation, for which it is expected the government would be willing to pay annually at least \$1,000,000, and perhaps \$2,000,000.

"The *Sacramento Times and Transcript* calculates the cost of putting on a line and running five coaches daily each way at \$3,000,000, and the clear profits of \$500,000. But these estimates are all conjectural.

"In order to test the practicability and profit of the project, two trains a week, of five coaches each, it is thought, would be all-sufficient the first year, and afterwards put on coaches and stock, as the demand of travel required. Five coaches, with ten passengers each, would give fifty men, beside the drivers. Armed with revolvers, they could defend themselves against any Indian attack.

"Men experienced in life on the plains tell us that no difficulty would be encountered in hiring Western men with their families to settle at the different stations, particularly if the United States will establish military posts at convenient distances, and the telegraph line is run over the same route. They also express the opinion that little difficulty would be experienced from the Indians."

[From the *Alta California*, June 4.]

#### THE PANAMA R. R. AND THE DANGERS OF THE ISTHMUS.

No monopoly ever existed that did not surround itself with difficulties resulting from a policy which, though it brings profit at the outset, will require a greater expenditure in the end. Since the public passing to and from the Atlantic and the Pacific coasts, have been forced to patronize the Isthmus route exclusively, disaster has attended the management of the Panama Railroad, and the alarming effect will be felt to that extent which must not only deter those who wish to go from one ocean to the other, but endanger the present capital and darken the future prospects of the company, as well as seriously injure the business of the steamship companies on either side. We depend upon the Panama Railroad Company for the safe transit of their passengers and freight.

In constructing a highway such as the Panama route was supposed to be, every accompanying circumstance is sufficiently plain to convince any association of men, shrewd enough to become leading capitalists, that their enterprise needs some protection within itself other than the fact that the public must accept it as the only thoroughfare. The Panama Company did not seem to reflect that previous to the location of the road thousands had crossed on foot and by conveyances provided by natives, and that no disturbances occurred. They did not consider why this was so, and how they might preserve the existence of a kindly feeling between the population and the American in transit, and thus maintain their own interests in an expansive position. They forget that as the natives had acquired a means of livelihood out of the foot and mule travel through their country, they would require a like advantage indirectly in the completion of the road, which could easily have been granted them by making the city of Panama a terminus, enjoying the same

favor extended to Aspinwall. Rather than do anything toward benefiting the inhabitants of Panama, the company preferred to hazard the lives of multitudes of passengers, the agents of the road, and the valuable property in their charge. This has been done, backed by the prospect that the company's taverns at Aspinwall would produce a larger income than all that could be said in favor of the route by well treated travelers and conciliated natives. In order to arrange this wretched and ungenerous policy, each ship load of passengers is detained at Aspinwall long enough to fill the company's sub-treasuries at the "hotels;" but at Panama passengers are hurried into the cars and boats, with scarce an opportunity of procuring a drink of water. The natives see through the aggrandizing scheme, and have long been nursing a black idea of being avenged, and the massacre of the 15th of April was its first general expression.

The monster accident of the 6th inst. is still stronger evidence against the miserable organization effected by the company for the management of the road. Incompetency, recklessness, and a miserly economy are the prominent features. No care is taken to prevent the track from sinking where the piles and ties are rotting away, and no watch is kept along the line to discover any natural decay, or injury that the vindictive natives may be inclined to do; but passengers are crowded into long unwieldy trains, and rushed over the track with an uncertainty attending their safety as intense as though they were walking in deep darkness the brink of an abyss. The last disaster is the commencement of a series whose lamentable consequences the whole country may feel unless the company proceed immediately to remedy every defect. This they will probably not do until successful competition is established. Another route is demanded now more than ever; and, knowing that the people of all the States will sustain it, we indulge the hope that the affairs of Central America will soon warrant the opening of a safe means of transit, which will obtain permanent support, while we are compelled to await, we trust for a short time only, the opening of a wagon road and the construction of a Pacific Railroad.

At the same time the steamship companies on either side, who are dependent so entirely upon the Panama Railroad Company, should insist that the necessary changes be made, and the necessary precautions taken to save future passengers by the Panama route from massacre and slaughter.

[From the *Santa Fe Gazette*, May 24.]

#### THE PACIFIC RAILROAD.

During the summer of 1853 we devoted a considerable portion of the columns of the *Gazette* in advocating the propriety of locating the Pacific Railroad through this Territory, upon what is known as the central, or Albuquerque route, and we intended before this to have referred to the subject again. It is a sad thing for New Mexico, that while she, beyond question, possesses the best and most practicable route for the location of this great national highway, she should have so few advocates in her favor. Since the organization of the present territorial government, she has not had a delegate in Congress capable of explaining to the government her advantages in this or any other respect; she has been like a suffering dumb man, who could not be heard because he could not speak. The



same may be said of the executives and secretaries that have been sent us, with the exception of Governor Lane and Mr. Allen, the first Secretary; both these officers took a deep interest in the welfare of the Territory; and especially was this the case with Gov. Lane; he lost no opportunity to present her claims for the Pacific Railroad, and no man, in the same length of time, could have collected more information with regard to the different routes than he did during his stay in New Mexico; he defended the Albuquerque route with great enthusiasm, as the best and most central, and perhaps the only practicable one that would be satisfactory to the interests alike of the whole Union.

We think the chances now are that the road will not be located on the Albuquerque route; at the same time, we are satisfied that it possesses advantages over any other on the continent; but the misfortune is we have nobody in Congress to explain those advantages, while some of the most talented and influential men in Congress are in favor of the Southern, or El Paso route. If the road is much advantage to us, it must pass through the center of the Territory, or somewhere near the center.

In order, too, that the railroad may benefit all parts of the union equally, it is necessary that it should start from the center of our Western States, which would be St. Louis, and that it should pursue the most direct practicable route Westward to San Francisco, in California. Such a course would bring the road through the center of New Mexico.

This would place the road on the shortest and most practicable route, at the same time that it would have the effect immediately to enrich the Territory; and without this we fear it is to remain the poorest part of the vast empire of the United States.

We intend to devote a part of our columns to the advocacy of the central route for this road, and although our feeble voice may not have much weight, yet it will serve to show that New Mexico has at least one friend.

[From the Democratic Press.]

#### GREAT RAILROAD ENTERPRISES.

It is gratifying to see that with the return of peace in Europe, Russian enterprise is turning its attention toward the development of the resources of that great country. Among the new enterprises are several for the construction of extensive lines of railroad. Only two lines, as yet, exist: one from St. Petersburg to Poland and the Austrian frontier; the other from St. Petersburg, by way of Moscow, to Odessa—of which latter the southern terminus is approaching its completion. These lines, however, are only intended to form the principal arteries, whence a great number of branch roads are to run to the different provinces of the vast empire. In addition to these, Saint Petersburg correspondence, brought by the Niagara, mentions a project for continuing the Riga-Dunaborg line up to Kursk, by which the fruitful centre of Russia will be put into rapid connection with the western provinces and seaports, and thus secure the inhabitants of those districts from the return of dearth, from which they frequently suffer. Two other lines are proposed—one from Odessa to Kromentschug, and the other from Theodosia, in the Crimea, to Moscow. It is understood that the Emperor favors these enterprises, and will extend every needful facility to capitalists to carry them forward to completion.

These lines of road, when completed, will

exert a magical effect in developing and putting to active use the wealth of the country; and they will also be precursors of quite as remarkable a change in the habits and character of the people. Serfdom, already considered unwise and unjust by the Emperor and a large and influential portion of the Russian people, will speedily be superseded, and between fifty and sixty millions of people will be raised from the condition of slaves to that of freemen. As mere works of defence, in a military sense, those lines of road will be worth more to Russia than a thousand Cronstadt or Sebastopols.

Few persons, we imagine, have any idea of the extent to which railroads are now being laid down in British India. From recent debates in Parliament, we learn that a railway to Delhi, 900 miles in length, has been sanctioned, of which 56 miles are already completed and 500 miles contracted for, to be finished toward the end of 1856; that the great India Peninsular Railway (Northeastern Extension) has also been authorized, contracted for, and nearly completed; that the Southeastern Extension, 85 miles in length, has been sanctioned to Tookah, and is partly under contract; that a line from Madras to the southwest is to be opened toward the end of the present year, and that the Scinde Railway has been sanctioned from the harbor of Durachee to the Indus, a distance of 110 miles. The company having charge of this latter road, it is also stated, are at present engaged in collecting the capital and completing the surveys. Besides those mentioned, another road from Barado to Surat, 163 miles long, has been sanctioned. Thus 1,260 miles of railroad are either in process of construction, or soon to be contracted for.

In addition to these extensive enterprises, long lines of railroad have been projected in Turkey, to be constructed by the aid of British capital, and railroads have been commenced in Egypt. The railway system of Germany, which was checked by the war, will now probably be extended. Italy, also, is now being penetrated by this great improvement. Piedmont has one or two lines; the Pope, we believe, has sanctioned a line in the Roman States; and only a few weeks ago a line was opened in Naples—a country whose government has, until quite recently, set its face against railroads and all other great public improvements.

Our own extensive railroad system has, for the last five years, been extended at an average rate of 2,393 miles per annum. It is not improbable that at the end of the next twenty years the United States will have a hundred thousand miles of railroad.

This immense extension of the railroad systems of the world will require mountains of railroad iron, and we ought to do our full share of the work required for its manufacture.

MEMPHIS, CLARKSVILLE & LOUISVILLE R. R.—Ground was broken on this road at the town of Clarksville, on Monday, June 23. No previous notice had been given, but a large company of the citizens of Clarksville were there, and the commencement of work was made in a formal manner.

CLEVELAND & MAHONING R. R.—The Cleveland & Mahoning Railroad is now open, and regular trains are running to Warren. We are indebted to the officers for a time table, that took effect July 1st.

#### NORTH-WESTERN TEXAS.

Within the past five or six weeks we have visited the section of country lying between the Trinity and Brazos rivers, comprising the counties of Tarrant, Parker, Wise, Ellis, and the prospective one of —, embracing the celebrated valley of the Keechi. The estimate we had formed of the agricultural and other advantages of this beautiful and important portion of our State, has undergone but little alteration since our examination of it. In some respects we were agreeably disappointed. It has better timber, and better water, and a more abundant supply than we had anticipated. The counties of Tarrant and Parker will compare favorably with any in this State, in regard to the quantity and quality of lands, while they possess superior advantages in the culture of all kinds of stock. This country is better adapted to the growing of grain than any other of the staple commodities of the South. Cotton can be raised, but never with so much profit as corn, wheat, oats, rye, &c.

We heard many of the citizens of those counties who had emigrated from the Western States, declare that better wheat could be raised in Northwestern Texas than in Illinois, Kentucky, or Ohio. These counties are fast filling up—perhaps more rapidly than any in the State. Tarrant votes over 500, and Parker 750. Lands are cheap, and we advise those desirous of procuring homes there, to do so without delay.

We had the pleasure of addressing the citizens of both counties upon the subject of railroads. They are all, so far as we have learned, in favor of the Vicksburg and El Paso Road, and opposed to the State plan, *pure or mixed*; to Sherwood, Pease & Co.; and especially are they opposed to the little shirt-tail convention to be holden in Austin, in July next. —Tyler Register, June 4.

CINCINNATI AND MACKINAW R. R.—A meeting of citizens of Lansing and Hillsdale, and others interested in the building of a railroad from Amboy, via Hillsdale and Lansing, to Traverse Bay and Straits of Mackinaw, was held at the National Hotel, in the city of Detroit, on Monday, the 23d inst. The meeting organized by the election of Hon. JOHN P. COOK, of Hillsdale, Chairman, and EDWIN R. MERFIELD, of Lansing, Secretary.

The following named gentlemen were present as delegates from Hillsdale county: John P. Cook, D. L. Pratt, F. M. Holloway, A. Cressey, William Waldron, C. J. Dickerson, D. Beebe, L. A. Bostwick, H. H. Sherman, C. W. Ferris, Hon. R. Gardner, Jno. C. Robertson.

From Ingham county, J. C. Bailey, James Turner, V. S. Murphy, J. W. Longyear, Benj. Hart, J. L. Bair, John Thomas, E. R. Merfield, Wm. H. Chapman.

From Eaton county, Amos Hamlin, from Clinton county, Hon. John Swegles.

The Chair briefly stated the object of the meeting, which was then addressed by Hon. H. H. Emmons, and others.

On motion of Mr. Pratt, of Hillsdale, a committee of eleven was appointed, for the purpose of collecting subscriptions, &c. The following named gentlemen were appointed as such committee:

D. L. Pratt and F. M. Holloway, Hillsdale; R. Gardner, Jonesville; H. C. Hodge, Concord; M. A. McNaughton, Jackson; A. Hamlin, Eaton Rapids; J. Bailey and Wm.



H. Chapman, Lansing; John Swegles, St. John's; J. H. Adams, Dewitt.

A committee consisting of Jon. W. Longyear, H. H. Emmons, and C. J. Dickerson, was appointed to draft Articles of Association, and were instructed to report the same at the next meeting. On motion the meeting adjourned.—*Hillsdale Gazette*.

### GALENA & CHICAGO RAILROAD.

The annexed statistics of the Galena and Chicago Road show a remarkable increase of business during the last seven years:

Earnings from May 1, 1855, to April 30, 1856.

| Months.      | Freight.     | Passengers. | Mails, etc. | Total.       |
|--------------|--------------|-------------|-------------|--------------|
| May, 1855..  | \$119,135 95 | \$92,913 55 | \$2,056 70  | \$214,106 20 |
| June.....    | 144,887 84   | 76,953 75   | 1,912 30    | 222,553 89   |
| July.....    | 121,353 62   | 62,606 67   | 1,955 33    | 185,920 52   |
| August....   | 133,893 75   | 63,498 67   | 2,673 81    | 210,066 23   |
| September..  | 176,106 36   | 82,784 53   | 2,423 12    | 261,320 08   |
| October....  | 200,052 43   | 119,563 76  | 2,754 23    | 322,370 42   |
| November..   | 151,299 64   | 83,534 97   | 2,907 40    | 237,732 01   |
| December..   | 92,072 19    | 55,901 77   | 2,381 87    | 150,355 83   |
| Jan'y, 1856. | 55,722 43    | 42,430 35   | 2,548 47    | 100,701 25   |
| February...  | 48,699 41    | 38,691 00   | 2,163 47    | 89,573 88    |
| March.....   | 64,903 83    | 60,380 69   | 2,196 81    | 127,491 33   |
| April.....   | 87,103 76    | 102,039 71  | 4,351 90    | 193,495 37   |

Total.... 1,405,235.11 880,410.44 30,141.41 2,315,786.96  
Expenses.....\$1,063,744 85

Showing the increase of Road and business from May 1, 1850, to May 1856:

| Year ending May 1. | Average number of miles operated. | Cost of Road operated. | Capital Stock. | Debt.     |
|--------------------|-----------------------------------|------------------------|----------------|-----------|
| 1850.....          | 25                                | \$408,282              | \$261,339      | \$175,930 |
| 1851.....          | 42                                | 426,028                | 332,097        | 119,627   |
| 1852.....          | 62                                | 453,338                | 444,193        | 60,145    |
| 1853.....          | 90                                | 1,833,636              | 1,362,559      | 542,287   |
| 1854.....          | 150                               | 4,143,656              | 2,682,169      | 1,597,256 |
| 1855.....          | 197                               | 5,285,226              | 4,334,800      | 2,420,221 |
| 1856.....          | 232                               | 7,742,613              | 5,441,500      | 3,272,568 |

These amounts include \$696,420 Bonus stock, issued in 1851.

| Year ending May 1. | Per cent of ex- penses to earnings. | Gross earnings. | Earnings per mile operated. | Dividends. | Surplus.   |
|--------------------|-------------------------------------|-----------------|-----------------------------|------------|------------|
| 1850.....          | 28%                                 | \$48,332        | \$1,933.28                  | 10         | \$1,152.92 |
| 1851.....          | 38                                  | 127,685         | 3,004.35                    | 15         | 12,549.90  |
| 1852.....          | 41                                  | 177,928         | 3,468.23                    | 15         | 48,115.57  |
| 1853.....          | 39                                  | 482,003         | 5,355.58                    | 20         | 93,438.75  |
| 1854.....          | 45                                  | 799,014         | 6,146.26                    | 21         | 175,694.40 |
| 1855.....          | 44                                  | 1,506,710       | 7,648.27                    | 17         | 315,544.48 |
| 1856.....          | 46                                  | 2,315,767       | 9,960.37                    | 22         | 330,628.45 |

TEXAS WESTERN R. R. Co., is now progressing finely, with the most promising results. It receives sixteen sections of land, gratis, from the State of Texas—enough to construct the road, and leave as much land to the Company as built the Illinois Central Road.—*Financial Express*.

☞ The Court of Appeals of Kentucky have confirmed the decision of the lower court in the case of the Maysville and Lexington railroad Company; consequently the sale of the road under the foreclosure of the bondholders stands good.

EARNINGS of the Indianapolis, Pittsburg and Cleveland Railroad Company, for first four months of 1855 and 1856:

|                  | 1855.       | 1856.       |
|------------------|-------------|-------------|
| January.....     | \$19,650 82 | \$21,316 79 |
| February.....    | 13,509 24   | 17,020 60   |
| March.....       | 18,957 54   | 22 176 47   |
| April.....       | 18,928 69   | 23,333 55   |
| Total.....       | \$71,046 29 | \$88,066 21 |
| Deduct 1855..... |             | 71,046 29   |
| Increase.....    |             | \$17,869 92 |

### LIST OF RAILROADS IN OHIO, WITH THE NAMES OF THE PRESIDENTS AND THEIR PLACES OF RESIDENCE.

| ROAD.                                      | LENGTH.   | PRESIDENT.           | LOCATION.        | CONDITION.            |
|--|-----------|----------------------|------------------|-----------------------|
| Ashtabula and New Lisbon.....              | 84 miles. | Eben Newton.         | Canfield.        | In Progress.          |
| Bellefontaine and Indiana.....             | 123 "     | John Brough.         | Indianapolis.    | Complete.             |
| Cincinnati and Chicago.....                | "         | Caieb B. Smith.      | Cincinnati.      | In Progress.          |
| Cincinnati and Fort Wayne.....             | 94 "      | Peter B. Bailey.     | Winchester, Ind. | do                    |
| Four Mile Valley.....                      | 31 "      | James Elliott.       | Oxford.          | do                    |
| Cincinnati, Ham. and Dayton.....           | 60 "      | S. S. L'Hommedieu.   | Cincinnati.      | Complete.             |
| Cincinnati and Mackinaw.....               | 420 "     | W. Gunclick.         | Germantown.      | In Progress.          |
| Cincinnati and Hillsborough.....           | 37 "      | Noah L. Wilson.      | Chillicothe.     | Complete.             |
| Marietta and Cincinnati.....               | 258 "     | Noah L. Wilson.      | do               | In Prog., 120 m. com. |
| Cincinnati, Peru and Chicago.....          | 97 "      | W. C. Hannah.        | La Porte, Ind.   | do                    |
| Cin'ti, Wilmington and Zanesville.....     | 131 "     | Frank Corwin.        | Wilmington.      | Complete.             |
| Cleveland, Columbus and Cincinnati.....    | 135 "     | L. M. Hubby.         | Cleveland.       | do                    |
| Columbus and Xenia.....                    | 55 "      | Wm. Denuison, jr.    | Columbus.        | do                    |
| Cleveland, Painesville and Ashtabula.....  | 95 "      | Witham Care.         | Cleveland.       | do                    |
| Cleveland and Pittsburg.....               | 101 "     | Charles W. Rockwell. | New York.        | do                    |
| do do Extensions.....                      | 95 "      | do                   | do               | do                    |
| Cleveland and Toledo.....                  | 194 "     | Henry Martin.        | Buffalo, N. Y.   | do                    |
| Cleveland and Mahoning.....                | 85 "      | Jacob Perkins.       | Cleveland.       | In Progress.          |
| Cleveland, Zanesville and Cincinnati.....  | 140 "     | Simon Perkins.       | Akron.           | do 61 m. com.         |
| Clinton Line.....                          | "         | Van R. Humphrey.     | Hudson.          | do                    |
| Clinton Extension.....                     | "         | H. N. Day.           | do               | do                    |
| Columbus, Piqua and Indiana.....           | 102 "     | M. G. Mitchell.      | Piqua.           | Complete.             |
| Dayton and Cin'ti Short Line.....          | 52 "      | Charles Remelin.     | Cincinnati.      | In Progress.          |
| Cleveland, Painesville and Ashtabula.....  | 140 "     | Van R. Humphrey.     | Hudson.          | do                    |
| Northern Indiana.....                      | 89 "      | Folmer.              | Adrian, Mich.    | Complete.             |
| Toledo and Illinois.....                   | 76 "      | W. Baker.            | Toledo.          | do                    |
| Dayton and Michigan.....                   | 120 "     | T. J. S. Smith.      | Dayton.          | In Prog., 28 m. com   |
| Dayton and Western.....                    | 40 "      | R. R.ickey.          | do               | Complete.             |
| Dayton, Xenia and Belpre.....              | 70 "      | Simon Gebbart.       | do               | 16 miles complete.    |
| Eaton and Hamilton.....                    | 45 "      | David Barnett.       | Camden.          | Complete.             |
| Tremont and Indiana.....                   | 123 "     | L. Q. Rawson.        | Tremont.         | do                    |
| Greenville and Miami.....                  | 47 "      | James Thompson.      | New York.        | Complete.             |
| Iron Railroad.....                         | 13 "      | S. W. Dempsey.       | Ironton.         | do                    |
| Little Miami.....                          | 84 "      | Jacob Strader.       | Cincinnati.      | do                    |
| Mad River and Lake Erie.....               | 153 "     | K. F. Osborn.        | Sandusky City.   | do                    |
| Ohio Central.....                          | 141 "     | Elias Fayette.       | New York.        | do                    |
| Ohio and Mississippi.....                  | 191 "     | S. L. M. Barlow.     | Cincinnati.      | In Prog., 84 m. com.  |
| Sandusky, Mansfield and Newark.....        | 116 "     | Geo. B. Wright.      | Newark, O.       | Complete.             |
| Springfield and Columbus.....              | 19 "      | A. D. Rodgers.       | Springfield.     | do                    |
| Springfield, Mt. Vernon and Pittsburg..... | 114 "     | Columbus Delano.     | do               | In Prog., 49 m. com.  |
| Steubenville and Indiana.....              | 116 "     | Thomas L. Jewett.    | Steubenville.    | Complete.             |
| Tiffin and Fort Wayne.....                 | 102 "     | R. G. Pennington.    | Tiffin.          | do                    |
| Scioto and Hocking Valley.....             | 56 "      | A. M. Damosin.       | Portsmouth.      | Complete.             |
| Ohio and Pennsylvania.....                 | 187 "     | W. Robinson, jr.     | Pittsburg.       | do                    |
| Ohio and Indiana.....                      | 131 "     | Samuel Hanna.        | Ft Wayne, Ind.   | do                    |
| Cleveland, Medina and Tascawwas.....       | 150 "     | L. D. Tallman.       | Medina.          | In Progress.          |
| Columbus and Hocking Valley.....           | 70 "      | Borland.             | Lancaster.       | do                    |
| Pittsburg, Maysville and Cincinnati.....   | 69 "      | T. W. Peacock.       | McConnellsville. | do                    |

46 Roads.

4,687 m's.

2,593 miles completed.

2,094 miles in progr'ss.

Some small portions of the above lines run into other States; but on the other hand there are some small branches not included, which will be quite equal to them. Several of the unfinished lines are rapidly progressing.

### IRON TIES.

An invention has recently been made public in New York which has for its object the improvement of the road bed by the substitution of iron ties for wooden ones. The rail rests upon a chair attached to a cylindrical piece, which fits loosely into a strong hollow column about a foot long. Within this column is placed a mass of India rubber, upon which the weight of the rail rests, and which is designated to yield gently to the pressure of the cars, and thus prevent the disagreeable jolting experienced upon most railroads.—These columns, terminating in solid plates, are buried in the ground, upon a foundation of stone, leaving the chairs just above the surface. The chairs are connected by wrought or cast iron bars, answering the purpose of the ordinary wooden sleepers. It is claimed that this track is more durable, more easily laid down, less liable to get out of repair, and pleasanter to ride over than others.

OHIO & INDIANA RAILROAD.—The Ohio Stockholders of this company at a recent meeting, voted unanimously in favor of a consolidation with other roads between Pittsburg and Chicago.

THE SCHUYLER FRAUDS.—This famous subject has again been called up by the unanimous decision of the Court of Appeals, in the case of the Mechanics' Bank vs. the New York and New Haven Railroad. The decision reverses the opinion of the Court below on the general ground that the certificate of stock upon which the action was based is void to all intents and purposes, as being in fraud of the charter, as representing that which had no existence in fact, and which could have none in law, and because there was no surrender of a previous certificate.

### STAGE LINE FROM SHREVEPORT TO THE MOUTH OF RED RIVER.

A regular tri-weekly stage line was to be established between Shreveport and the mouth of Red River, on the 1st of July. The distance is 230 miles, and is to be made in four days. This we regard as the forerunner of a railroad line that must eventually be built between the same points.

☞ At a recent meeting of the stockholders of the Chicago and Rock Island Railroad Co., the following gentlemen were elected Directors: Henry Farnam, Chicago; A. C. Flagg, New York; T. C. Drant, do.; Ebenezer Cook, Davenport; Isaac Cook, Chicago; Lemuel Andrews, Rock Island; Wm. Walcott, Utica, New York; Irad Hawley, New York; F. H. Tows, do.; C. W. Durant, Albany; J. F.



Tracy, Chicago; N. B. Judd, do.; T. D. Bruce, Peoria.

At a subsequent meeting of the Directors, the following officers were elected; Henry Farnam, President; A. C. Flagg, Treasurer; F. H. Jones, Secretary.

#### RAILROAD RECEIPTS FOR MAY.

We annex a statement of the receipts of the various railroads for May, and for five months of the present year:

|                        | 1856.     | 1855.     |               |
|------------------------|-----------|-----------|---------------|
| Baltimore & Ohio....   | \$437,466 | \$351,605 | Inc. \$85,861 |
| Balt. & O., Wash. B'h  | 41,851    | 34,211    | Inc. 7,640    |
| Chic. & R. Island....  | 153,656   | 128,990   | Inc. 23,666   |
| Cleve. Col. & Cin....  | 314,303   | 97,640    | Inc. 16,763   |
| Cleve. & Pittsburg.... | 63,739    | 55,238    | Inc. 7,901    |
| Cleve. & Toledo....    | 91,757    | 76,965    | Inc. 14,792   |
| Erie.....              | 617,664   | 475,128   | Inc. 142,536  |
| Galena & Chic.....     | 228,797   | 214,166   | Inc. 14,691   |
| Harlem.....            | 90,362    | 82,959    | Inc. 8,603    |
| Hudson River.....      | 150,716   | 130,448   | Inc. 20,268   |
| Illinois Central.....  | 214,434   | 121,434   | Inc. 93,166   |
| Ind'polis & Cin....    | 40,114    | 30,895    | Inc. 9,219    |
| Indiana Central.....   | 36,347    | 27,111    | Inc. 9,436    |
| La Crosse & Mil....    | 41,476    | .....     | .....         |
| Macou & Western....    | 22,820    | 22,617    | Inc. 203      |
| Mil. & Miss.....       | 61,661    | 66,944    | Dec. 5,283    |
| N. Y. Central.....     | 696,913   | 633,381   | Inc. 63,532   |
| N. Y. & New Haven....  | 77,393    | 72,200    | Inc. 5,19     |
| Norwich & Worcester    | 29,592    | 27,942    | Inc. 1,650    |
| Ohio & Penn.....       | 86,848    | 88,782    | Dec. 1,884    |
| Penn. Central.....     | 453,556   | 323,711   | Inc. 127,875  |
| Reading.....           | 349,512   | 449,694   | Dec. 100,182  |
| Stonington.....        | 21,985    | 22,571    | Dec. 586      |
| Wis. Lake Shore....    | 22,020    | .....     | .....         |

|                        | 1856.       | 1855.       |                |
|------------------------|-------------|-------------|----------------|
| Balt. & Ohio.....      | \$1,656,576 | \$1,514,242 | Inc. \$112,334 |
| Balt. & O. Wash B'h    | 183,704     | 166,622     | Inc. 15,079    |
| Chic. & R. I.....      | 526,106     | 453,683     | Inc. 70,418    |
| Cleve. Col. & Cin....  | .....       | .....       | .....          |
| Cleve. & Pittsburg.... | .....       | .....       | .....          |
| Cleve. & Toledo....    | 431,437     | 353,021     | Inc. 66,416    |
| Erie.....              | 1,996,671   | 1,750,307   | Inc. 246,364   |
| Galena & Chic.....     | 730,372     | 685,004     | Inc. 55,368    |
| Harlem.....            | 426,643     | 423,531     | Inc. 4,812     |
| Hudson River.....      | 935,527     | 834,000     | Inc. 121,027   |
| Illinois Central.....  | 755,276     | 444,267     | Inc. 351,009   |
| Ind'polis & Cin....    | 194,572     | 148,068     | Inc. 46,504    |
| Indiana Central.....   | .....       | .....       | .....          |
| La Crosse & Mil....    | .....       | .....       | .....          |
| Macou & Western....    | 141,925     | 134,383     | Inc. 7,540     |
| Mil. & Miss.....       | 194,127     | 189,025     | Inc. 5,012     |
| N. Y. Central.....     | 2,765,479   | 2,347,806   | Inc. 218,173   |
| N. Y. & N. Haven....   | 353,416     | 313,823     | Inc. 44,593    |
| Norwich & Wor....      | .....       | .....       | .....          |
| Ohio & Penn.....       | .....       | .....       | .....          |
| Penn. Central.....     | 2,181,295   | 1,543,285   | Inc. 633,010   |
| Reading.....           | .....       | .....       | .....          |
| Stonington.....        | .....       | .....       | .....          |
| Wis. Lake Shore....    | .....       | .....       | .....          |

#### PETRIFICATION.

*Experiments showing that in what is called Petrification, Animal Matter is changed into Carbonate of Lime, and Vegetable Matter into Silica, probably by processes similar to Infiltration.*

BY HORATIO PRATER, ESQ.,

The small fossil shells found by me about half way up the mountain behind the "Tombs of the Queens," at Thebes (Egypt)—an altitude, I suppose, of nearly 1,000 feet above the Nile—dissolve with effervescence *entirely* in dilute muriatic acid. They therefore consist of the carbonates of lime and magnesia. Those shells found near the "Tombs of the Kings" are much larger than the above; but on breaking one up, and touching the *centre*—which is equally hard with the exterior—with muriatic acid, a vigorous effervescence took place. The animal matter, therefore, in all these cases is either *changed* into the earthly carbonates, or has been dissolved and *replaced* by such earthly ingredients. Fossil shells are found in like manner embedded in the limestone rock behind the citadel at Cairo, and the *interior* of these shells also, as well as the exterior, consists of earthly carbonates.

As in this case, and also at the Tombs of the Queens, the *contiguous* rock is soft carbonate of lime, the opinion that this has been dissolved and made to take the place of the animal matter, would appear more plausible and probable than an actual conversion of the animal matter into carbonate of lime. The great *hardness* of the carbonate of lime would perhaps incline us to think that such conversion or deposition was made while the lime was in a state of fusion; but I shall quote afterwards a fact that will rather incline us to believe it to have been effected by a deposition from water, particularly as the process must have been *extremely* slow, since the organic texture is preserved.

The *crystallized* carbonate of lime from "Belzoni's Tomb" at Thebes does not dissolve altogether in muriatic acid. It leaves, I presume, nearly half its bulk behind in the form of semi-transparent softish matter, probably silex. In like manner the large masses of very *hard* stone taken from near the grottoes of Dayr and Nackl, and found in greater or less quantity in the vicinity of all the limestone cliffs of the Nile, effervesced briskly in muriatic acid, but soon afterwards remained unacted on further. The white hardish mass left behind was probably above half; and as the rock itself scratched glass, the part insoluble in muriatic acid, though heated, was probably silex. These large masses, therefore, are justly called "*silicious* limestone," consisting, as they appear to do, of a *fused* mass of chalk and silex. That they have been fused is also clear from their rounded form in several parts. Such hard round masses I observed in the top of one of the grottoes of Dayr and Nackl, embedded in the softer chalk, constituting a real "pudding stone" ceiling. As these round masses effervesced in muriatic acid, they are not *silica only*, as is often stated in books, but a fused mass of this and carbonate of lime.

#### FOSSIL WOOD.

This is found a few miles out of Cairo, in great part on the summit of a hill in the desert, also still further on towards Suez and near the Natron Lakes. One of the pieces examined effervesced in muriatic acid for some time, but the *greater* part of the mass of wood remained unacted on. The part dissolved gradually fell from solution, but was totally soluble in hot water. This specimen, therefore, contained a considerable quantity of carbonate of lime; but other specimens neither effervesced nor dissolved in the slightest degree in muriatic acid.

It was not fused, but only slightly blackened throughout, by being kept an hour or two in a fluid mass of silex and potass.

It was very easily reduced to powder in an iron mortar, and neither in this state nor in small pieces was it dissolved; nor did it take fire, as charcoal does; when thrown into hot fused nitrate of potass.

When the powder was intimately mixed with potass and exposed to heat, it also fused as silica docs.

Exposed to a red heat, this fossil wood blackens to a certain extent. As fossil shells are found in chalk, so this petrified wood is found lying on sand, a strong argument against those who have thought carbon convertible into silica. The grand question on this subject is, whether the solution of silica that surrounded the wood was a *fused* mixture (as with potass or soda), or an aqueous solution. Since the wood retains its appearance so perfectly, one point seems clear—that the *silicization* took a very long period to complete, and that the wood was in a position to resist putrefaction. The formation of so hard a substance as the enamel of the teeth from a cool watery solution, is in favor of the silica not having been in a state of fusion at the time of its deposition. Another argument in favor of the same view (which applies equally to the carbonate of lime which took the place of the animal matter in the shells found above the Tombs of the Queens), is the following change in wood, found in cutting a canal near Ferry Bridge.\*

"When a little water entered this peaty and shelly deposit, from the upper magnesian limestone, it produced in the wood a singular petrification; for the external bark and wood were unchanged, but the internal parts of the wood were converted to carbonate of lime, in which the vegetable structure was perfectly preserved. In like manner some of the nuts were altered; the shell and the membranes lining it were unchanged, but the kernel was converted to carbonate of lime, not crystallized, but retaining the peculiar texture of the recent fruit." It is singular that sulphuret of iron was retained *outside* this same wood, the "elective molecular attraction," as Phillips terms it, being for the carbonate of lime.

As a solution of carbonate of lime *permeated* (1) the wood in this case, we have no reason for supposing anything like a *transmutation* of the woody fibre or kernel of the nut into carbonate of lime. And from analogy we may say the same of the interior of the shells, which are filled with carbonate of lime. They have probably laid a very long time in such solution, which I believe has an antiseptic power, and hence is well calculated to keep the animal matter in the interior from putrefaction, while the lime is gradually taking its place. I proved by experiments many years ago that carbonate of soda has an antiseptic power (see *Phil. Magazine*).

I shall here state what I believe to be a new discovery, viz: that carbonate of lime undergoes fusion at a certain heat, *when surrounded by an atmosphere of carbonic acid gas, without any assistance from pressure*. "Sir J. Hall discovered that limestone undergoes fusion under a *pressure* which prevents the escape of



its carbonic acid," viz: 173 atmospheres, equal to a column of sea-water of 5,700 feet.\* I

\* "Phillips's Geology," vol. ii. p. 52, 95.

have repeated the experiment above alluded to, which I first performed several years ago, lately, in the following way. Some chalk powder was put at the bottom of a crucible; over this was spread a pretty thick layer of nitrate of potass, in which were pieces of plumbago, common charcoal, and silica; over this, again, was a thin layer of chalk, and the whole was covered with common earth, and heated to redness for two or three hours. On examination, the chalk above and below the nitrate of potass was fused into a *hard*, porous, grey mass, something like some kinds of lava, the pieces of plumbago and charcoal had totally disappeared, having been converted into carbonic acid gas by the oxygen of the nitrate of potass; the piece of silex was changed to an opaque white by the heat, but otherwise unaltered.

I have no doubt that many of the very hard masses of carbonate of lime seen on the banks of the Nile have been fused in a manner somewhat similar to the above, since the enormous pressure that Sir J. Hall employed can occur only occasionally in nature, and in subterranean parts. An excess of carbonic acid gas is well known to assist the solution of carbonate of lime *in water*. In the above experiments we also observe that it tends to render it *fluid* by fusion.

P. S. (April, 1856.) In conclusion—although, as above stated, I consider it *more probable* that no *actual conversion* of the animal matter contained in the shells took place into carbonate of lime, nor of the wood into silica, still, at present, the new views of Mr. Low and M. Dumas on atomic weights and substitutions, and, above all, the *fact* that certainly carbon, sulphur, and *now* phosphorus (Schrotter's recent discovery), and perhaps oxygen (Schonbein), can exist in *two different states* (having different properties in each!) incline me to consider it *not impossible* that calcium and silica may sometimes be formed by vital, or even by inorganic processes. A third edition of Mr. Low's work "On the Simple Bodies," has just appeared (1856: Adam Black, Edinburgh), and though, perhaps, too prone to speculate rather than experiment, this gentleman has done a service to science by its publication. The neglect of his work by our men of science, of which he complains with justice, was to be expected, as, whether right or wrong, he is clearly too bold and original a thinker for the scientific powers of the day. It is rather amusing to find a good chemist, as he is certainly, writing in his last work in reference to the above discoveries, that the age of alchemy seems coming again, and yet *cautiously* avoiding all mention of Mr. Low's book *anywhere in his whole work*.

\* "Phillip's Treatise on Geology," vol. ii. p. 30.

From the Independent Observer.

### N. E. & S. W. ALABAMA R. R.

At the meeting of the stockholders on the 26th of September, 1855, an estimate was made of all the available subscriptions in grading and money. All the subscriptions which had been released, and all which were in any way doubtful, either from having been repudiated or from any other cause, were excluded, a due allowance in every way for bad debts was made, and it was estimated that upon obtaining the renewal of all the reliable subscriptions, and an additional amount of \$220,000 in cash, the company would be in a condition to commence operation on the first division, by letting out the deficit grading and ties for half cash and half stock. I accordingly, framed a caption to bind the stock when a suitable provision had been made in this way for the grading, bridging, masonry, trestle work, culverts, crossties, and general management on the first division, of something upwards of one hundred miles. There have been a few instances, say ten or twelve, which, through motives of policy it was thought better to abate the amount of an original subscription; but in hundreds of instances, the original subscriptions have been greatly increased; and the new stock obtained from new subscribers, and by additions made by the old subscribers amounts to about \$240,000. We have in all, between six and seven hundred subscribers to the present plan, and the subscriptions taken upon the original plan of securing the grading for the whole line and \$600,000 in cash, and the only essential difference in the two plans is, that the subscriptions on this part of the line are now made binding upon one hundred instead of three hundred miles. No subscriber has been released from his original subscription by his not renewing or subscribing to the present plan, and when an amount shall have been subscribed either upon the present, the original, or both plans, to fulfill the conditions upon which the original subscriptions were made, all the subscriptions new and old taken to the road, with about ten or twelve exceptions, will be binding whether renewed or not. I have, therefore, whilst taking subscriptions upon the present plan, been steadily advancing towards the consummation of the original, and if the present be carried out and the work commenced the conditions of the unrenewed subscriptions will probably, in a short time thereafter, likewise be fulfilled and they will then also be made available.

The following statement of your liabilities and resources upon the present plan, will furnish you accurate information in regard to the condition of the affairs of the company at this date. Your liabilities are taken from my original report of the estimated cost of the road, &c.

#### LIABILITIES.

|  |             |
|--|-------------|
| Graduation in Sumter.....                  | \$252,500   |
| do in Greene.....                          | 231,000     |
| do in Tuscaloosa.....                      | 481,000     |
| do in Bibb.....                            | 60,000      |
| do on First Division.....                  | \$1,024,500 |
| Crossties do do.....                       | 111,400     |
| Bridging, masonry, and gen. management.... | 180,000     |
| Liabilities First Division.....            | 1,315,500   |

#### RESOURCES.

|  |           |
|--|-----------|
| My report before the stockholders meeting, showed a deficit of \$47,150, but as this deficit was made up at that time, I will state your resources as they now appear upon my books: |           |
| Grading contracts closed for stock in Sumter.....  | \$ 49,000 |
| In Greene.....   | 65,800    |
| Tuscaloosa.....  | 230,400   |
| Grading contracts closed for stock.....  | \$346,600 |

|                                |           |
|--------------------------------|-----------|
| Cash subscribed in Sumter..... | \$127,000 |
| " " in Greene.....             | 276,650   |
| " " Tuscaloosa.....            | 230,400   |
| " " Mobile City.....           | 50,050    |

" " on 1st Division.....\$574,950  
Of this cash subscription there is to be applied for bridging, masonry, and general management..... 180,000  
And for graduation and ties, the balance of \$394,950, on terms of one-half cash and one-half stock, adequate for grading and ties on said terms..... 789,900

Resources 1st Division.....\$1,315,500  
The meeting held at the Court House in Tuscaloosa, a week before the stockholders' meeting in Eutaw, resulted in the procurement of some \$18,000, which have been included in the statement of resources for this Co.

All subscriptions obtained on the second and third divisions of the road, and all unrenewed subscriptions on the first division, have been excluded from the estimate here given of available resources for the construction of the first division; and the directors have, by the terms of the latter subscriptions, the unquestioned right to apply the means of the company at any point between the Jefferson county line and the Mobile and Ohio Railroad they may deem most expedient.

As an evidence that the grading, etc., can be let on terms of one half cash and one-half stock, I have already closed contracts to the amount of \$20,000 in this way, and I have received a proposition since the meeting from a wealthy citizen, to take \$100,000 in grading upon these terms.

The basis upon which you propose to commence operations is much larger than that usually adopted, and contemplates a provision before commencing of more than half the cost of the first division completed and equipped, as will be shown from the following statement:

|  |           |
|--|-----------|
| Cost of preparing the road way.....                        | 1,315,000 |
| Iron, rolling stock, depots, stationery, printing, &c..... | 1,240,000 |

Cost 1st Division, complete entire.....\$ 555,500

The plan is substantially that upon which all works of importance are built, viz: to prepare the road, and then with company bonds to purchase the iron and equipments furnished, which last are cash articles in market at all times.

A company, just as an individual, possesses a credit equal at least to the amount of its resources; and where the road has good connections and has been judiciously located, they find no difficulty in clothing it, if a local subscription can be obtained sufficient to prepare it for the rails. This local subscription is the index to the amount of wealth contiguous to the road, and if equal to about half its cost, is a sure guarantee that there will be local traffic enough which, together with the through traffic, will ensure remunerating dividends, if the cost of the road be favorable, as in the present case.

Iron masters and car builders usually dispose of their stock for company bonds or their proceeds, and when they are made satisfied that there will be no difficulty in the ability of a company to meet and pay the interest falling due upon these bonds, they do not hesitate to make the most favorable terms with a company for their bonds.

It is quite certain that a larger local subscription can never again be obtained upon this road, and that if it is built it must be commenced with a subscription not larger, at least, than the one at present secured.

After overcoming the difficulty on the first one hundred miles, and upon which is embraced the heaviest work, no trouble is expected above, where the work is light, where the people have no outlets, and where they have always cheerfully responded to every call made upon them. The most cheering



accounts have been received from this part of the line, and an additional impetus will be given throughout the entire route, when once the word be given for a forward movement.

The work up in the valleys might be commenced one year later than that below, and finished simultaneously; but it is probable that the great anxiety manifested above will expedite, and insure the commencement of operations on that end of the road several months before absolute necessity requires.

The main object in binding the stock on the first division is to save time, and commence the work before another season shall have passed; for a delay of another year would effectually defeat the whole enterprise, and the Wills' Valley Railroad Company would seek an outlet, either by Gadsden or by the Cahaba Valley, and by consolidating with some other company, throw us forever off the main route.

The committee appointed to examine the cash and grading subscriptions obtained by Mr. E. D. Sanford, would submit the following report:

The subscription is made up of six hundred names and upwards, among which we have discovered only some ten or twelve which are of a doubtful character, and those only for small amounts. We do not believe that a more available subscription to the same amount could be raised within the State of Alabama. In every case we have examined the original obligations, and we find

Subscriptions in cash.....\$327,800  
do in grad., by closed contract..... 343,600

According to the report of the Engineer in Chief, the total cost of preparing the road through the four lower counties is \$1,315,500, and the resources of the company seem to be as follows, viz:

Grading for stock.....\$345,600  
Cash for bridges, etc., and gen. management... 180,000  
Cash for letting grading on the terms half cash,  
half stock, \$347,800, adequate to grade on said  
terms..... 605,600

Total provided for.....\$1,122,200

This taken from the total cost of preparing the road bed in four counties, namely, \$1,315,500, leaves grading and ties unprovided for to the amount of \$94,300, which amount of grading and ties will require in cash \$47,150, to be put with the rest under contract, half cash and half stock—so that the sum named, viz: \$47,150, is the actual deficiency short of the provision contemplated for the active prosecution of the work.

The deficit of \$47,150, here stated as necessary to the prosecution of the work, was raised at the meeting, and resolutions passed recommending the immediate and vigorous prosecution of the work.

The old Board of Directors was unanimously re-elected, to-wit:

W. S. Mudd, Jefferson county.

A. Battle, Tuscaloosa “

R. H. Clements, “ “

A. B. Dearing, “ “

J. H. Dearing, “ “

Sol. McAlpine, Greene “

J. I. Thornton, “ “

S. L. Cresswell, “ “

James Jack, “ “

James Hair, Sumter “

R. F. Houston, “ “

The following officers were also unanimously elected, to-wit:

Dr. L. C. Garland, President.

E. D. Sanford, Chief Eng. and Gen. Ag't.

W. S. Foster, Sec'y.

J. C. Houston, of Sumter, Collector.

P. H. Jack, of Greene, “

B. Burks, of Tuscaloosa, “

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| “ “ per month.....                | 3 00   |
| “ “ per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| “ “ per month.....                | 10 00  |
| “ “ per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| “ “ per month.....                | 25 00  |
| “ “ per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.  
All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hox and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JULY 15, 1856

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, . . . . . TUESDAY, JULY 15.

#### TEXAS LOAN BILL.

We have given our readers for some time past the sentiments of the citizens of Texas as expressed at their county conventions, favoring the loaning policy—we hope soon to give the result of the action of the General Railroad Convention, held at Austin, July 4, 1856, and the passage of the Loan Bill by the Legislature of Texas, now in session. The probabilities of the passage of such a bill may be judged of by the following editorial of the *Texas State Gazette*, of Austin, 28th June. Its passage must promote the prosperity of Texas beyond human calculation, and give strong evidence of the wisdom and enterprise of the people and Legislature of Texas:

#### RAILROAD CONVENTION IN JULY.

As the time advances for the holding of this convention, counties are appointing their delegates. We publish two meetings this week, the proceedings of which had been sent to us for that purpose. Without exception, almost, we find the loaning policy everywhere endorsed, and we are glad to notice that parties are taking hold of this question who have been hitherto identified with the State system. Such for instance we gather from the Calhoun proceedings. From the sentiments expressed at that meeting, the all absorbing object is to attain for the State not only adequate security for the return of her funds, but for the certain completion of work commenced.

To do this it is proposed to designate by law the routes. In Falls county a similar feeling evidently exists. They propose the construction of three main trunk lines of railroad. This view of the subject is wide-spread. The more we discuss the loaning policy, with a view to render our surplus available, the more imperious it becomes to point out the roads to be built. We want great highways, and as we have time and again declared, also, so far as Austin is concerned, we are for a great thoroughfare to the extremes of the State, whether we may be upon the line of a projected route, or fifty miles from it. Our whole State, and not ourselves alone, is the true and only sound principle of action on this question.

We see that a railroad meeting has been held also in San Antonio, and we shall publish the proceedings next week. At this meeting the Loan Bill now before the Legislature is advocated.

Indeed we question if at half dozen a county

meetings in Western Texas the State system could be adopted.

It is therefore necessary for us to consult together on the most practicable plan of carrying out this system. In our paper of to-day, under the head of "Condition of Texas," it will be seen that as a great cotton planting State, we have an immense interest at stake. The moral effect of the convention in July will mainly depend upon its conservative features. If plain and practical views are entertained and adopted, with little talk and fustian, it will have its effect throughout the whole State. From the character of many of the delegates appointed, we have much confidence in the result.

[From the Chicago Democrat.]

#### THE GEORGIAN BAY AND ONTARIO SHIP CANAL.

Last fall and winter this subject occupied a large space in the newspapers, both at the West and in Canada. The great importance of the work was generally admitted, and no one who has a correct knowledge of the richness and vast extent of the country west of Lake Michigan, and who is acquainted with the rapid development of this magnificent region can doubt for a moment that a ship canal on the proposed route will soon become a prime necessity to the internal commerce of the North American continent.

At the convention of delegates held in Toronto last September, a survey of the route was ordered, and Kivas Tully, Esq., was engaged to superintend the work. A company of Chicago gentlemen was appointed to procure the services of a chief engineer, and acting according to their instructions, Col. R. B. Mason was engaged. The appointment gave universal satisfaction, and in December Col. Mason went over the proposed route with Mr. Tully, and formed a very favorable impression of the practicability of the project. Mr. Tully was to complete the local surveys as soon as possible, and furnish the figures to Col. Mason, who was to make a general report, both as to the feasibility and the cost of the work, and its importance to the commerce of the Canadas and the Northwestern States. The Chicago committee assumed the payment of Col. Mason for his services and the cost of publishing the report, as their proportion of the expense. Funds have been collected and paid over to Col. Mason, sufficient to pay him for his services as far as he has gone, and we doubt not the balance to meet the pledges of the committee will be promptly furnished by our citizens.

The question has been frequently asked, Why has not Col. Mason made his report? For the simple reason that he has not received the local surveys from Mr. Tully. Why he has not received them, both Col. Mason and the committee here are at a loss to determine.

We saw a stray paragraph a few days since, stating that one branch of the Canadian Parliament had passed a bill granting a charter to the Georgian Bay Canal Company. Perhaps our Toronto friends have found the route so favorable that they have determined to take the matter in their own hands, and build the

canal themselves. We have no doubt that the business men of Chicago would receive such an announcement with great pleasure. What they want is the canal, and if our Canadian friends will push it forward, we are quite sure they will most cheerfully withdraw from any participation in the movement. It is due to Col. Mason, however, and to the Chicago public, that some reason should be given why the local surveys have been so long delayed. We hope our friends Mr. Brown, of the *Toronto Globe*, or Mr. Thompson, of the *Colonist*, will solve the mystery. We certainly have lost none of our interest in the canal, and are ready to do whatever we can to bring the subject properly before the public, and to secure its completion at the earliest day possible.

[From the Houston Telegraph, June 23.]

#### THE STATE PLAN.

The people are now setting on foot, through several incorporated companies, a system of railroads more complete and better adapted to the general wants than any suggested by the friends of State plans. All of the latter have made Galveston the coast terminus, and Houston the point of divergence, from which all the roads are to run North, East, South and West. Corporations are now progressing steadily and healthfully, with these identical lines, and with others also, not embraced in any State plan hitherto put forth. The Henderson Road is certain to be built from Galveston to Houston, and thence to Henderson and Red River. The Houston Road, from Houston to Red River, between the Brazos and Trinity valleys, and a branch to Austin; the Harrisburg Road, from Harrisburg and Houston to Richmond, and thence to such point on the Colorado as the company shall find most expedient, and thence to the Rio Grande; the San Antonio Road, from Lavacca to San Antonio; the Texas Western Road, from the Texas line, near Shreveport, to El Paso; the Henderson and Burkeville Road, through Southeastern Texas. These roads, except one, which is contracted for, are all progressing, and with the best assurances of successful completion, and together constitute a thorough system, capable of indefinite extension. The opponents of railroads are fighting them with the "State Plan," a plan that never can and never should be executed in a Republican government. Capital is always sagacious—much more sagacious than political hucksters, who would locate railroads to accommodate the men who could talk the loudest on election days, and control the most votes; who could farm out the contracts on the same principle, and after roads were built, commit their management to the same class of men. This has been the experience of every State work in the Union, and hence all such works have completely failed, costing several times their value, and were so mismanaged as to become a burden on the people, increasing instead of diminishing taxation. Such would be the results of State works here, and such a vortex the people of Texas will not rush into at the instance of our theoretical friend of the *Galveston News*.



[From the Austin State Gazette, June 28.]

### RAILROAD MEETING IN CALHOUN COUNTY.

Pursuant to previous notice a meeting of the citizens of Calhoun county was held at the Court House on Saturday night, the 14th inst.

On motion, Gen. W. H. Woodward was called to the chair, and C. A. Ogsbury appointed Secretary.

The Chairman briefly explained the object of the meeting to be, to take into consideration the propriety of appointing delegates to the Railroad Convention to be held at Austin on the 4th of July.

On motion, a committee consisting of Messrs. John E. Garey, H. Runge, H. J. Huck, and E. Wood, were appointed to draft resolutions for the consideration of the meeting, who, after having retired a short time, returned and reported the following resolutions, which were unanimously adopted, to wit:

1st. *Resolved*, That approving the call for a Convention to be held in Austin, on the 4th of July next, for the purpose of considering the general subject of internal improvements, the chairman of the meeting is authorized to appoint seven delegates to represent us therein.

2nd. *Resolved*, That having the constitutional power, it devolves, as a high and imperative duty upon the State Government, to establish and support, or aid in the support of such a general system of internal improvements as will afford the facilities for development and transportation now required by the country.

3rd. *Resolved*, That whilst we do not condemn the principles of the so-called "State Plan," when its details are fairly and equitably adjusted, in obedience to the laws of trade and a sound and true political economy, and with reference to those channels already opened by nature; yet, in view of past legislation upon the subject, the present condition of things, and the exigencies of the country, we acquiesce in, and our delegates are instructed to favor the "loaning policy;" but with the following restrictions:

*First*—The legislature should by law, designate the routes and fix the *termini* of such roads as shall receive the aid of the State, so that the system shall be harmoniously and economically adjusted. The most important of these are:—1. A road commencing on our eastern boundary not below 32° north latitude, and running west so as to form a part of the connection between the Mississippi river and the Pacific ocean.—2. A road commencing at Galveston and running to Houston or Harrisburg, and up between the Trinity and Brazos rivers,—connecting with the first road,—with such collateral roads as shall be deemed necessary. 3. A road commencing at the head of ocean steam navigation on the Bay of Matagorda—Powderhorn—running up to Victoria or some other point on the Guadalupe above that place, there branching to San Antonio and Austin, and connecting with the first road.

*Secondly*, The corporation applying for State aid should not only have completed twenty-five miles of road before receiving the loan, but the Governor and an Internal Improvement Board should be satisfied that they have as much stock subscribed, *in good faith*, as the amount of the State's loan, and that calls upon the same to the amount of at least five per cent have been actually paid.

4th. *Resolved*, That the above system, with

a just and equitable appropriation to the improvement of the navigation of rivers, where improvements can be economically made, will meet the present demands of the whole State.

The chair then appointed the following gentlemen as delegates, viz: F. S. Stockdale, Esq.; H. Runge, Esq.; Col. W. M. Cook; Col. D. M. Stapp; Judge W. M. Varnell; Dr. Jos. H. Baldridge; C. A. Ogsbury, Esq. On motion, it was ordered that the editors of the *Indianola Bulletin* and *Victoria Advocate* be requested to publish the proceedings of this meeting.

From the Prairie (Texas) Blade, June 6th.

### TEXAS WESTERN RAILROAD.

*Editor of the Blade:*

DEAR SIR—On Saturday last, a circumstance occurred to arouse the inquisitive propensities of a portion of the citizens of our quiet village. About noon their attention was attracted to a small party of men who had encamped on the east edge of town, and whose appearance and proceedings indicated that they were no ordinary visitors. Their movements were unaccountable to the uninitiated and betokened the happening of some event in the history of our town of a novel and extraordinary character. For a short time all were in suspense and anxiety to know who, and what was the object of the strangers, and the cause of their sudden advent amongst us.—The truth was soon discovered, the welcome intelligence spread from mouth to mouth, that they were a company of scientific gentlemen, in the service of the Texas Western Railroad Company, who were traveling on a tour of observation, examining the country on or near the parallel of 32°—to ascertain the latitude of various points thereof, preparatory to a survey etc of the road.

The party consisted of Col. A. B. Gray, Topographical engineer, who is so well and favorably known to the people of the United States, as one of the commissioners who run the Boundary line between the U. S. and Mexico, who at a later day at the instance of a New York company, demonstrated by his energy and scientific ability and close mastery report the entire practicability of the Southern Route, (as it is termed by way of distinction) in preference to all other routes contemplated as a highway from the Atlantic to the Pacific ocean, together with Col. Bradley the agent of the Company, and whose conversation and gentlemanly deportment prepossesses us in his favor;—and some other gentlemen whose names we did not learn.—After taking the necessary astronomical observations to determine the latitude of this place—which is doubtless on, or very near the parallel of 32°.—next morning the party proceeded westward in the direction of Fort Graham on the Brazos River, some 60 miles distant, where they also intend to take some observations and determine its latitude; and at this point their labors will terminate for the present.

Col. Gray spoke in rapturous terms of the face of the country over which they traveled and its adaptation to the building of a railroad from the crossing of the Trinity River at Bazette to this place;—the opinion of one so distinguished in his department is entitled to, and will doubtless receive from the Company which he represents the weight and importance it deserves, and will have a corresponding influence in the selection of the country over which the road will pass;—which is already

located to run on, or near the parallel of 32°. A word as to the road:—it is settled that it can and will be built by this Company; they have ample means;—the first talent of the country is employed—their resources and influence to conduct and consummate the enterprise—(gigantic as it is), are commensurate to the great undertaking. They have counted the cost; financial arrangements are about being completed, and they have already exhibited an earnestness, energy and wisdom in the prosecution of the Road, under their charter sufficient to convince the most skeptical on the subject of a railroad of this magnitude, that it is their intention, and that they are able to complete it. ("Always saving the act of God and the kings enemies.") Figures and data can be produced to sustain the acts and good faith of this company from the inception of their charter to the present time; and from the incalculable advantages and benefits resulting to our State, as well as to the Confederacy of which it is a member—by the building of this Road. It is the duty of every citizen of our glorious and happy country, to aid and forward the speedy completion of this magnificent enterprise, if not by an actual outlay of means, by encouragement to those who by their own private resources, yet unaided by either State or Federal Government, have commenced and are now building the Road with a zeal and spirit worthy of the magnitude and importance of the greatest work of this or any other age! And if it should become necessary, and the Company deem it necessary to request the Legislature of our State to extend to them the most enlarged privileges and facilities, either by a loan of money so much to the mile, (the State taking a mortgage on the Road &c., or in any other way that will secure the State), to insure the building of the Road and hasten its completion. NEVARRO.

Read the above, written by one of the most practicable and far-seeing men of our community. For the last ten years Texas has by her Legislature astonished the world by her liberal offers to companies to construct roads and especially railroads. An age is passing away that has been noted for long and continued talk on this master topic. Let the present be noted for action; grade by piecemeal if no faster the road that will open a pathway for the giant produce of this great State of ours.—We must have railroads—no great rivers open the way for the white sails of commerce—our land is literally teaming with produce for foreign markets. We can get this produce off by transportation on the Iron horse and in no other profitable way: so let us harness him and put him to work at once.

NILES' LOCOMOTIVES AND MIDDLETON'S LITHOGRAPHS.—We are indebted to Mr. Middleton of the firm of Middleton & Co., Lithographers of this city, for an elegant colored lithograph of one of Niles' passenger locomotives. These engines are justly celebrated for their beauty of proportion and efficiency in work. The lithograph is executed in six colors and is a beautiful and true picture of the noble machine it represents. We hardly know which most to admire, the skill and ingenuity of the mechanic who designed it, or the accuracy and taste of the artist who transferred it to paper.



## PANAMA RAILROAD.

It is stated that the business of the Panama Road for the current six months shows an increase of 35 to 40 per cent. over the same period of last year. The April receipts were \$151,000; and up to the 30th of April for the four months, there were \$500,000. It requires but an average of \$100,000 per month for May and June, to give \$700,000 for the six months. It is more likely to be \$750,000 or \$800,000. If \$750,000 this would give the usual 6 per cent. semi-annual dividend, and leave a surplus of 3 to 3½ per cent. It is understood that although no action upon the July dividend has yet been had in the Board, that it will be, as usual, 6 per cent. in cash.

This is the statement as made by Eastern papers immediately after the terrible massacre that has just been committed. We leave it to any man of ordinary intelligence to imagine what would have been this increase had this road been on our own soil, and perfectly safe to travelers.

[From the Texas State Gazette, June 7.]

## THE COMING SESSION.

We are glad to learn that during the present adjournment, the prominent subjects to come before the Legislature have been extensively examined. Some of the ablest legal minds of that body have given the several codes their attention, and will be able to review them in a manner to reflect credit upon the State. The impossibility of obtaining at the present time full sets of the volumes of our laws, as well as the large accumulation of the laws themselves, render their codification a work of pressing importance. Our sister State of Mississippi holds her adjourned session in November, when it is the intention of that body to devote its time exclusively to the consideration of the new code, until it shall be completed.

We have also the subject of internal improvements to occupy a portion of our attention. The conflicting views between the State system and loaning policy will have to be reconciled, and some ground taken by mutual concessions which will enable the people of Texas to obtain substantial aid from the State in the work of railroads. For our part, we would desire to see the State disconnected with the fortunes of a railroad system, as far as possible. State railroad making, or State banking, must always interfere with the legitimate objects of government. It is true that we may lose by the loaning policy, but we think it may be so guarded as to prevent the possibility of so great a loss as might befall a young, inexperienced State like our own involved in the building of every railroad in a territory much larger than the whole united area of any three States of the Union.\* According to the loaning policy, whether of money, iron, or land, or mixed, the company must in the first place prepare the road before receiving the aid from the State to lay down the iron. Such requirements might also be made as to secure the proper foundation; structure and wood for cross-ties. These are details which we only suggest to show that such an outlay on the part of the com-

pany might be involved prior to the obligation of the State to furnish the iron or money for its aid, as would afford her—with a lien on the road itself, and lands if necessary—ample security for the return of the borrowed money. Then, again, we might provide against the exhaustion of the moneys in the Treasury. We might limit the time for the acceptance of the bonus by railroad companies, or we might specify the roads to be aided, and thus secure one or two main trunk roads. The accumulation of a debt, or the exhaustion of the State's resources in the midst of an unfinished and wide spread system of railroads, are fatal evils, and might take place under a State or corporate plan, if not specially guarded against.

In making our experiments under the loaning policy, should we fail, the transition to the State system would simply be the taking, on the part of the State, of partially finished roads, with all the outlay for construction already made by their owners, at the low rates of a Sheriff's sale. If we can so guard the law that the aid of the State will not be misappropriated by the companies to other objects than the purchase of the iron, the probabilities of serious loss to the State, in such an event, cannot be great.

The expense of grading is disproportionately small in Texas compared with almost any other State in the Union, and the aid of money to purchase the iron, or the loan of the iron itself, necessarily becomes a matter of greater importance here to railroad companies than elsewhere. Besides this, however, the bonus of land itself far exceeds Illinois, where her railroad land not only pays for the building of a long line of railroad, but will furnish a magnificent surplus. It is, therefore, only the more probable that with solvent companies in Texas, the loan of iron, or the loan of money to purchase it, would ensure the making of our railroads, as well as afford a margin for profits larger than in most any other State.

A road projected where there is a line of commerce, say for illustration, between our own town and the coast, being once built at low figures, on account of the naturally good grade of the country itself, the profits of the trade need not therefore be necessarily large to pay interest upon the money borrowed. Put the distance at 150 miles, and the bonus at \$6,000 per mile—the total sum borrowed would be \$900,000, which, at say 6 per cent., would be \$54,000. Without going further than the railroads of Georgia, we might show that a relative allowance for difference in population and resources would place the net receipts of such a road at \$150,000 at least. We mean that this amount would be admitted as a very low estimate of the actual money left in the treasury of such a railroad at the end of the first year's running, and after paying off all ordinary expenses. We will not indulge in speculating upon the vast increase of revenue beyond this sum, as the road might develop the productive resources of the State, nor are our views confined to localities. In few portions of our State may not a railroad, with prudent management, be made good paying stock. Some of the best paying routes will be those commencing on our extreme Northern frontier and terminating on the Gulf.

The great wheat growing region above us, equal to the whole State of Georgia, is to us a matter of concern as important as any section of country between our city and the Gulf.

We need the flour of that region for the whole State, and for shipment to the numerous ports of Cuba, the West Indies, Central and South America; for Texan ports stand at the head of the great American Mediterranean, and with anything like the enterprise of Memphis among their citizens, may at no distant day become depots of an immense trade.

This element of our wealth is not duly estimated. The following table, which we base upon the Report on Commerce and Navigation for 1854, shows the amount consumed of American flour, corn, beef and tallow, by countries lying nearer to our coast than to any of the Atlantic ports:

| COUNTRIES.                     | FLOUR.  | CORN & MEAL. | BEEF.  | TALLOW.   | SUM TOTAL.  |
|--------------------------------|---------|--------------|--------|-----------|-------------|
| DIS.                           | VALUE.  | DIS.         | VALUE. | DIS.      | VALUE.      |
| Dutch West Indies.....         | 50,399  | \$236,842    | 72,531 | \$13,570  | \$38        |
| British West Indies.....       | 79,871  | 40,699       | 3,112  | 20,000    | 229         |
| Honduras.....                  | 13,939  | 8,107        | 4,150  | 42,070    | 59,146      |
| British Guiana.....            | 60,539  | 957,659      | 40,007 | 52,070    | 59,146      |
| French West Indies.....        | 143,464 | 103,498      | 76,470 | 1,933,078 | 416,018     |
| French Guiana.....             | 298,939 | 2,400        | 53     | 12,000    | 684         |
| Cuba.....                      | 7,501   | 34,379       | 14,519 | 33,100    | 126         |
| Other Spanish West Indies..... | 1,937   | 7,730        | 20,732 | 14,180    | 300         |
| Haiti.....                     | 50,421  | 263,009      | 57,692 | 4,350     | 94,063      |
| Venezuela.....                 | 43,581  | 918,578      | 2,232  | 14,730    | 2,391       |
| Brazil.....                    | 443,543 | 2,434,172    | 4,401  | 3,570     | 168         |
| Mexico.....                    | 17,099  | 85,198       | 131    | 3,200     | 193         |
| Argentine Republic.....        | 24,315  | 197,346      | 2,306  | 3,200     | 3,960       |
| Bolivia.....                   | 3,410   | 5,010        |        |           | 2,681,794   |
| Peru.....                      | 3,435   | 10,460       | 250    |           | 2,681,794   |
| Chile.....                     | 10,670  | 60,999       |        |           | 109,227     |
| West Indies generally.....     | 1,650   | 7,432        |        |           | 154,067     |
|                                |         |              |        |           | 2,600       |
|                                |         |              |        |           | 27,899      |
|                                |         |              |        |           | 71,350      |
|                                |         |              |        |           | 9,475       |
|                                |         |              |        |           | \$1,063,234 |

With, we reiterate, an area for the successful growth of wheat equal to the State of Georgia, we have but to establish outlets on our Gulf for this product of our remote interior to command a trade equal, in time to the wheat productive energies of the State. We could supply the whole of the articles in the above table, amounting in all to \$7,000,000. And with proper foresight on the part of our Legislators, the means are in our hands now, and ought to be directed, to enable Texas to contemplate a participation in this trade, situated as it is, immediately at her doors, and in the track of her own legitimate commerce. This is a matter in which the people of Red River, the Sabine, the Trinity, and the Brazos, are undoubtedly as much interested as we are.

Then we might turn to the lumber region of Eastern Texas, and its future connection with the prairie West, or to the Mexican and Western Texas trade in mares, mules and cattle, and its future connection with the lower Mississippi river, and with the upper, by the Fulton, Cairo and St. Louis Railroads. All these routes are only to be attained by concert and harmony of the several sections of our State at this time. We make no mention of our cotton, and our direct shipment to Europe and to the North, which also involves

\*Of course we except California. Texas is four times the size of every other State, except Missouri, Virginia and California. Her area is 237,504 square miles.



the running of our roads to the Gulf. We defer much we have yet to say on the subject, to another time.

Shall we then, by irreconcilable divisions on a subject in which the successful and early development of these vast State resources demands harmony, lose all its benefits for the want of it? Whether a State plan or merely State aid becomes the basis of our system, one great object of both parties is *certainly*. We have contended for the loaning policy, simply because we desire to see the State divested, as far as possible, from all schemes of trade and commerce outside of the legitimate pursuits of government. We desire a simple and economical form of government, and to leave to the citizens the management of every other interest which individual competition can control. We are desirous, however, to open up for review and legislative action, the whole line of policy to be observed in loaning the public money. We ought to require a rigid investigation into the affairs of every company, and establish such conditions precedent to obtaining aid from the State as will give us full security against bankrupt companies, against negligence, abuse or fraud, and such rules for enquiring into the management of railroads, as usual to other States. If the friends of the State plan find, as we believe to be true, that they are in the minority, we trust, as has been the avowal of Gov. Pease himself, that they will co-operate with us in effecting as secure a system as it is now practicable to adopt. We believe that *they will do so*, for it is evident to us that if defeat attend us in effecting a judicious and prudent plan through compromise and concession, that our people may be led to such violent extremes as to jeopardise all our substantial means for achieving any plan of railroads whatever, and leave us in the background, to suffer immense losses years longer for the want of facilities to get our crops to market, and the consequent evils of a want of population and money in the country. With the existence of six or seven hundred miles of railroad in Texas, properly distributed, so as to connect the extremes of the State, we should in one year witness our present land bonus rise to twice the valuable consideration of the \$6,000 per mile now proposed to be loaned in money to railroad companies.

#### WATER ROUTE TO SALT LAKE.

The following, from the *Alta California*, would seem to indicate that the best route to the Salt Lake Valley will be up the Gulf of California; and when it is remembered that the Southern Pacific Railroad crosses the Colorado, and consequently this proposed route, it gives additional importance to this proposition:

"Late explorations have rendered it extremely probable that water communication, by means of light draft steamers, may be had within seventy or eighty miles of Salt Lake City. This route is from the Gulf of California, up the Colorado and one of its branches, the Rio Verde, the upper branches of which approach, as is supposed, with navigable water, within the above named distance of Salt Lake City. Explorations are now being made by the Mormons, to test the practicability of the route. Should a communication of this kind be opened up, it will prove of vast benefit to Salt Lake City; and the trade of Utah Territory would soon be transferred

from St. Louis to the Pacific coast, while the trade itself would vastly increase. The economical, social and political consequences of the opening up of such a channel of trade, would be highly important to the whole country.

#### CONDITION AND PROSPECTS OF RAILROADS.

Our readers know that we have held, from the beginning, that the railroad interest would recover all that it lost by the storm of 1854, and would be placed on higher ground than ever. The reasons for this are quite obvious, but of course must have time for their development.

1. The railroad, considered merely as a machine, yields a larger return for its cost and labor than any other known agent of human contrivance. We need not quote statistics for this, but simply refer the reader to the gross receipts of any of the principal lines of railroad in the country. This fact, in regard to gross receipts, is palpable. Why, then, it may be asked, have they not uniformly and at all times yielded the largest dividends? To this we reply that the *net* receipts are modified, of course, by the *expenses* and the *cost*. The question then presented is to make these expenses as little as possible, and to fund the original cost in one precise sum, upon which should be charged no new construction or extra interest.

2. This operation has now, for some time been going on. It is clearly ascertained that the actual necessary running *expenses* of a railroad may be very much reduced. Various new inventions have been made by which the running expenses are reduced. Care and economy do much. The experience of the last two years has, in this particular, been very valuable to railroad companies. They have been compelled to economise, and in doing that have learned much of the art of economy. It is, in our opinion, pretty well demonstrated that the actual expenses of running a railroad need not be more than 40 per cent.; but 50 per cent. is generally allowed, and many roads exceed that. Let us suppose now a case:

|                           |              |
|---------------------------|--------------|
| Gross Receipts.....       | \$600,000    |
| 50 per cent.....          | 300,000      |
| Net.....                  | \$300,000    |
| Gross Receipts.....       | \$600,000    |
| 40 per cent.....          | 240,000      |
| Net Receipts.....         | \$360,000    |
| Capital.....              | \$3,000,000  |
| Dividend in 1st case..... | 10 per cent. |
| do 2d do.....             | 12 do do     |

Or, allowing 2 per cent. for a sinking fund, the dividends would be 8 and 10 per cent. We see here that a proper economy in the expenses of a road would make 2 per cent. difference in the dividend; or, reckoning money at 8 per cent. interest, of 25 per cent. in the value of the stock.

3. The roads which are finished are all of them funding their floating debt, reducing interest, compromising claims, and in one word,

consolidating their indebtedness in such a way as to be manageable, and pay the least interest. In such a case as that given above, the stockholders would be better off the larger the debt was. Suppose, in the above case, there was \$1,500,000 debt; then 7 per cent. on that, \$105,000, being deducted from \$300,000 net proceeds, leaves \$195,000, which is 13 per cent. in the first case, or 15 per cent. in the second. Many of the roads are situated very nearly like the case we have supposed, and after the process of economy and settlement of which we have spoken has been accomplished, will pay large cash dividends. Heretofore the money of the companies has been expended in doing work which properly belonged to the construction account, instead of expenses. This is gradually being rectified, and the public will be surprised to learn that roads which were supposed nearly worthless are paying large cash dividends.

4. Heavy crops and plenty of money are doing much for railroads. The first is filling all the freight cars, and the second is furnishing capital for those who need it.

Under these circumstances the rise in railroad stocks has already commenced, and although gradual, it is plain the public attention is turned towards them, and that soon a general demand will arise for that species of property. We quote the rise of some stocks during a few days, for the purpose of showing in what direction the wind blows:

|                        | June 14. | July 5. |
|------------------------|----------|---------|
| New York Central.....  | 91       | 93½     |
| Erie.....              | 56½      | 65      |
| Toledo.....            | 74½      | 77½     |
| Galena.....            | 110½     | 114     |
| Rock Island.....       | 91       | 93½     |
| Southern Michigan..... | 96½      | 98½     |

This is a rapid rise for so short a time, and it may be remarked that nearly all the railroad stocks are now higher than they were a few months since. It is also quite certain that many railroad stocks are very much below their intrinsic value. In fine, railroad stocks must now continue to rise for some months to come, and in the end will prove the very best class of investments.

The Bellville and Illinois Railroad Company are about to offer \$100,000 for their convertible 7 per cent. first mortgage Bonds, redeemable in 1873. The payment of principal and interest is also guaranteed by the Terre Haute and Alton Railroad Company, and by a lien on 1,000 acres of coal land near St. Louis. The Bellville and Illinois Road is a finished one, and is running profitably. The Company has a stock capital paid up of \$600,000, and the bonded indebtedness, including the present offering, is \$1,100,000, of which \$600,000 are a first, and \$500,000 a second mortgage.

The Reading R. R., is gradually making up the deficit of earnings of the first six months of the present year, as compared with previous ones.



**THE PACIFIC RAILROAD.**—Recent developments have rendered the construction of the Pacific Railroad no longer problematical. The special committee in Congress will report at an early day, after business is resumed by our national legislators, a bill providing for two roads—one to be constructed by the several companies now already chartered through Iowa and Minnesota, by a union of said roads at Ft. Kearney, and from that point a single trunk road to the navigable waters of the Pacific Ocean. That portion of the Northern route which lies within the State of California, will be assigned to the San Francisco and Sacramento Railroad Company. The Southern route, through Texas and by El Paso, is to be constructed by the Pacific and Atlantic Railroad Company and their associates, from San Francisco to El Paso; from that point eastward through Texas, the road is apportioned to the several railroads of Texas already chartered. These roads are to run from El Paso to such point on the eastern boundary of the State as they may select. The connections with the Mississippi River are then given to the several roads of Louisiana and Arkansas as desire to make them, and to such points on the river as they may select. Such is the substance of the bill, which meets general approval.—*Louisville Courier.*

#### ST. CROIX & LAKE SUPERIOR RAILROAD.

We learn from a late report of Mr. Robert Patton, Chief Engineer of this road, that the surveys have been completed and the line located from the town of Superior to Hudson, on Lake St. Croix. The distance is 131 miles. For convenience in making estimates, the line has been divided into two divisions—the northern and southern. The northern division commences at Superior and extends to a point south of the crossing of the St. Croix River, a distance of fifty miles; the southern division then commences, and extends to Lake St. Croix.

The cost of making the line of the northern division ready for the superstructure, is estimated at \$526,876 95. The maximum grade on the northern division is fifty feet to the mile. The southern division will cost, to make it ready for the iron, \$476,876 96. The maximum grade on the southern division is fifty feet to the mile. The total cost of putting the road in running order the whole distance, is estimated at \$2,000,000.

The subscriptions to the stock of the company (of which five per cent has been paid in) amount to \$145,000, and the right of way and depot grounds donated by individuals and government, is valued at \$206,000. The expenses, during the past year, have amounted to \$13,641 94.

The proprietors of the town of Superior have donated to the company forty-three acres of land, between Nemadji River and Allouez Bay, with two thousand feet of water front, for depot grounds and other uses of the road. But a moderate outlay in grading and docking upon this water front will be necessary. The depth of water is from fifteen to thirty feet; and a steamer of the largest class could land without difficulty anywhere along this front. The Superior Company also donated a right of way over its lands a distance of about three miles.—*Chicago Dem. Press.*

The Little Miami R. R. Co., have declared a semi-annual dividend of five per cent payable in mortgage bonds of 1855 at par.

According to the Wilkesbarre Spirit of the Valley, upwards of \$5,000,000 have been invested in the coal lands in the Lackawana Valley during the past year, and more than \$3,000,000 in Wyoming Valley. Other investments have since been made, making in all, a grand aggregate of probably \$10,000,000. The purchasers of coal lands, to facilitate their enterprises, have very generally concentrated their capital in companies formed and regulated under the General Mining law.

**TEXAS SALT.**—We see it stated in the Texas papers that salt works have been established in that State, about fifty-five or sixty miles above Austin, on the west side of the Colorado. The salt is said to be a superior article, and the best offered in that market.

**THE CHICAGO AND MILWAUKEE, AND THE WISCONSIN LAKE SHORE RAILROAD.**—The Wisconsin Lake Shore Road will make its first dividend since its completion, last season, on the 1st of July; 4 per cent. in cash. The passenger traffic is already immense, and cheaply operated, over the 86 miles, of which the Wisconsin Lake Shore Company own 40 miles, costing \$1,600,000, of which \$1,000,000 is in shares; \$400,000 in bonds, and \$200,000 in loan from the city of Milwaukee.

**READING RAILROAD.**—We give below a statement of the business of the Reading Railroad for the month of May, and the five preceding months of the fiscal year, compared with the business and receipts for corresponding time last year, as follows:

|   | 1856.               | 1855.               |
|---|---------------------|---------------------|
| Received from coal .....  | \$289,194 48        | \$387,897 33        |
| Received from merchandise..   | 31,600 61           | 28,488 15           |
| Received from travel, &c....  | 27,717 18           | 33,208 55           |
| <b>Total.....</b>   | <b>\$349,512 27</b> | <b>\$449,694 03</b> |
| Transportation, roadway, dumpage, Renewal Fund and all charges..... | 172,479 64          | 184,424 90          |
| Net profit for the month....  | \$176,032 63        | \$265,269 13        |
| Net profit for previous 5 mos..                                     | 489,767 05          | 711,817 37          |
| <b>Total net profit for 6 mos....</b>                               | <b>\$665,899 68</b> | <b>\$977,086 50</b> |

The receipts from travel and coal have fallen off largely, while the receipts from merchandise have increased. The loss for May, as compared with May last year, is nearly \$100,000. The net profits for six months on corresponding time last year show a loss of \$311,186. The friends of the road, however, think that this loss may be made up within the year.

The directors of the North Carolina Central Railroad have resolved that they should make two daily connections with the South Carolina Railroad. If they carry out this plan it will save much complaint on the part of travelers.

Dr. Young the, President of the Vicksburg, Shreveport and Texas railroad, visited Monroe last week, and informed the editor of the *Register* that in addition to the 160 laborers on the west side of Bayou Macon, there are upwards of 200 negroes at work on the track between Vicksburg and Macon, besides a number of Irish laborers, making in all a force of about 380 workmen. The *Register* understands that the rails will be laid on the track as far as Monroe by January next.—*South Western.*

**LEXINGTON AND BIG SANDY RAILROAD.**—The annual meeting of the stockholders of this Railroad was held at Mt. Sterling on the 21st when the President submitted his report. It appears from it that \$582,000 have been expended for graduation; that the right of way and land for depots had cost \$54,000, that the cost of the preliminary and locating surveys of the road was \$25,000; and the cost of engineering since the work of construction commenced has been a like sum of \$25,000, that the cross ties had been paid for to the amount of \$11,000 and \$2,500 more were bought at 25 cents each; that the company had near a thousand tons of rails ready to be laid at the east end of the line, which is prepared for track laying, that a fine twenty-four ton locomotive had been purchased, which was en route between Cincinnati and Ashland; that in the course of five months about seven additional miles would be ready for the rails at the east end of the line, and 33 miles, from Lexington to Mt Sterling at the west end, making an aggregate of 50 miles, and that to complete the graduation and masonry for the last 33 miles would cost \$140,000.

The old board of directors with one exception, were re-elected, and R. Apperson, Esq., was subsequently re-elected President.—*Maysville Eagle, July 3.*

**BUFFALO AND BRADFORD RAILROAD.**—A meeting of the stockholders of this road was held at Bradford on the 3d inst., for the purpose of organization. Daniel Kingsbury Esq., was elected President of the Co., and Sam'l P. B., of Erie, Sam'l D. Casey, Frank Williams, Jos. F. Clark, Abraham K. Johnson, Sylvanus Holmes, of Bradford, Sobieski Ross, of Coudersport, Pa., and Watson A. Fox, E. J. Baldwin, Wells D. Walbridge, C. Hitchcock, E. K. Bruch, of Buffalo, N. Y., were elected Directors for the ensuing year.

At a meeting of the Directors of the company, held on the same day, Watson A. Fox was elected Vice President, Abraham K. Johnson Secretary, Jno. R. Lee Treasurer, and Frank Williams, Chief Engineer of the company. The President reported that a sufficient amount had been subscribed to the capital stock of the company, to justify the board in putting the work under contract.

The engineer also made a report in regard to surveys. The President and others of the Buffalo and Pittsburgh Railroad Co. were present. The work on their road is to be commenced simultaneously with the other, and completed at the same time. Large bodies of men are employed at various points, opening coal beds, in order to be ready to supply coal as soon as the roads are completed, which will be some time during the coming fall.—*Buffalo Commercial Advertiser.*

**MEMPHIS, CLARKSVILLE & LOUISVILLE R. R.**—Ground was broken on this road at the town of Clarksville, on Monday, June 23. No previous notice had been given, but a large company of the citizens of Clarksville were there, and the commencement of work was made in a formal manner.

—The Court of Appeals of Kentucky have confirmed the decision of the lower court in the case of the Maysville and Lexington railroad Company; consequently the sale of the road under the foreclosure of the bondholders stands good.



## NEW RAILROADS BUILDING IN PENNSYLVANIA.

The following is a list of some of the most important of the railroads in actual progress of construction in this State :

No. 1. The Sunbury and Erie Railroad from Sunbury to Erie City, in the counties of Northumberland, Lycoming, Clinton, Elk, McKean, Warren and Erie - - - 268 miles. Forty miles of this road, from Sunbury to Williamsport, are completed and in use ; from Williamsport to Lockhaven, 26 miles, the work is in progress.

We shall take occasion, very soon to say more of this work, in its importance to the State, and to Philadelphia as a commercial city and a part of the State.

No. 2. The Lebanon Valley Railroad, from Harrisburg to Reading, in the counties of Dauphin, Lebanon and Berks 53  $\frac{1}{2}$  miles.

This road will connect with the Pennsylvania Railroad at Harrisburg, and with the Reading Railroad at Reading, and thereby open via the City of Reading a continuous railroad from Philadelphia to Harrisburg, almost as short as the existing route via the City of Lancaster.

No. 3. The North Pennsylvania Railroad, from Philadelphia to Bethlehem, in the City of Philadelphia and in the counties of Montgomery, Bucks, Lehigh and Northampton 55 miles.

This road is completed and in use to Gwynedd, 19 miles, and in progress to Bethlehem on the main road, and to Doylestown on the Branch road. The main road branches comprise 67 miles.

No. 4. The North Western Railroad, from Blairsville to New Castle in the counties of Indiana, Westmoreland, Armstrong, Butler and Lawrence 89  $\frac{1}{2}$  miles.

This road connects with the Pennsylvania Railroad at Blairsville, and the Cleveland and Mahoning Railroad at New Castle, whereby a direct communication of uniform gauge will be opened from Philadelphia to Cleveland, 476 miles. It may be, that the two companies between Blairsville and Cleveland, following the wise example of the three companies between Pittsburg and Chicago, will consolidate into one company with one road 175 miles long. If so, and more aid be rendered from this locality, would it not do to call the consolidated company the "Philadelphia and Cleveland Railroad Company?"

No. 5. The Hempfield Railroad, from Greensburg to Wheeling, in the counties of Westmoreland and Washington in this State, and in Ohio county, Virginia 76  $\frac{1}{2}$  miles.

This road is in progress between Wheeling and Washington ; at the latter place it will connect with the Chartier's Valley Railroad, in progress to Pittsburg ; but little if any work has been done east of Washington. The Hempfield Railroad is a link in a route to Cincinnati via Marietta and Chillicothe, whereby the distance to Cincinnati from Greensburg, is 338 miles, and from Philadelphia 660 miles.

The city of Philadelphia is a subscriber in Hempfield link, and the Pennsylvania Railroad Company in the Marietta road ; but very much remains to be done before the original programme will be consummated.

As consolidation might be a wise precaution and a strengthening remedy, perhaps the time is not very remote when a "Philadelphia and Cincinnati Railroad," 338 miles long, shall extend from the Pennsylvania Railroad at Greensburg, to Cincinnati, making a friendly line which cannot be divided nor estranged,

from Philadelphia to Cincinnati, 660 miles in length.

No. 6. Pittsburg and Steubenville Railroad, from Pittsburg to the Ohio river opposite to Steubenville, in the counties of Allegheny and Washington in Pennsylvania and in Brooke county, Virginia 42 miles.

This road has been leased to parties who have contracted to complete it. As originally planned it connected with the Steubenville and Indiana Railroad, whereby it was shown that the Pennsylvania gauge would be carried to Columbus, there to connect with the same gauge continued east from Indiana. And as the importance of such a route passing into central Ohio and thence farther west by connections beginning at Columbus, was obvious to the City of Pittsburg and the Pennsylvania Railroad Company, the City of Pittsburg subscribed to the stock of her own railroad company, and the Pennsylvania Railroad Company endorsed some of the bonds of the Ohio and Indiana Railroad Company.

Since these events, however, changes have ensued, not the least important of which is the termination of the Ohio and Indiana Railroad at Newark, about 32 miles east of Columbus, its change of gauge, and its connection eastward with the Wellsville route to Pittsburg. Instead, therefore, of a bridge over the Ohio at Steubenville there will be a ferry ; and at either end of the ferry, upon the banks of the Ohio if not at Pittsburg, will terminate for a time the Pennsylvania and the Ohio gauges.

Pittsburg and Philadelphia are alike interested in having a continuous uniform route from Pittsburg to the Mississippi river through central Ohio, Indiana and Illinois ; and when a propitious time shall come, as come it will, a vigorous movement, uniting earnest action with hearty co-operation, will overcome all hindrances and accomplish by treaty, alteration and construction, a union of links built under different organizations into one central trunk line to be worked and managed under one organization.

Such line would be the great trade artery between the lakes and the Ohio river, and would drain from the lines running across it, as naturally as the river and the lakes drain from the streams which flow into them.

No. 7. The Allegheny Valley Railroad, from Pittsburg to the north line of the State, in the counties of Allegheny, Armstrong, Clarion, Jefferson, Forest, Elk and McKean 179 miles.

This road is in use to Kittaning, 44 miles from Pittsburg. It was projected to connect with the wide gauge roads of New York but the track was laid down of the narrow gauge, conforming to the Sunbury and Erie road, with which a most advantageous connection may be made at Winslow via Brookville, 88 miles from Kittaning and 132 miles from Pittsburg.

From Winslow via the Sunbury and Erie route to Williamsport the distance is 95 miles, making the whole distance from Pittsburg to Williamsport 227 miles.

By a connection with the Sunbury and Erie road at Winslow, the Allegheny Valley road can have communication northward with western New York via Williamsport and Elmira, and with points east and south via Sunbury, Catawissa and Harrisburg.

The adaptation of the Allegheny Valley Railroad to the narrow gauge roads, was, we think, an act of judicious policy independently of the financial reasons which doubtless had an existence actual or prospective when the original design was modified.

No. 8. The Pittsburg and Connellsville Railroad, from Pittsburg to Cumberland, Maryland in the counties of Allegheny, Westmoreland, Fayette, Somerset and Bedford, in Pennsylvania, and in Allegheny county, Maryland 147 miles.

From West Newton to Connellsville, 25 miles, the road is in use ; other parts of the route are in progress of construction.

This road, when finished, will connect with the Baltimore and Ohio Railroad at Cumberland, 679 miles from Baltimore, making the distance from Baltimore to Pittsburg, by this computation, 326 miles, being six miles shorter than the route now open from Baltimore to Pittsburg over the Northern Central and Pennsylvania Railroads.

The Pittsburg and Connellsville Railroad, with the Metropolitan Railroad, and an intermediate link of the Baltimore and Ohio Railroad when completed throughout, will establish between Pittsburg and Washington a direct communication.

No. 9. The Lackawanna and Bloomsburg Railroad, from Rupert to Scranton, in the counties of Columbia and Luzerne 55 miles.

This road which connects with the Catawissa road at Rupert, 147 miles from Philadelphia, follows the Susquehanna river to Pittston, whence it follows the Lackawanna valley to Scranton, and connects with the Delaware, Lackawanna and Western Railroad, which gives it an eastern outlet towards New York City via the Delaware Water Gap, and a northern outlet into western New York via Great Bend.

The money cost of this road per mile, will be less than the money cost per mile, upon the same number of consecutive miles, of any other road in Pennsylvania.

No. 10. The North Division of the Northern Central Railroad, from Bridgeport opposite Harrisburg, to Sunbury, in the counties of Cumberland, Perry, Dauphin and Northumberland 54 miles.

This link originated in the charter of the Susquehanna Railroad Company, which was authorized to build a road projected from Bridgeport to Williamsport, 94 miles ; but as the Sunbury and Erie line occupied the ground between Sunbury and Williamsport, the Susquehanna road was located to terminate at Sunbury, and its construction commenced. After a time, the work was suspended ; but was resumed subsequent to the consolidation of the four companies between Sunbury and Baltimore, 138 miles, under the name of the "Northern Central Railroad Company." The road will now be pushed forward to completion.

The surveyed length of the foregoing ten roads, including only the north division of the Northern Central Railroad, is 1,031  $\frac{1}{2}$  miles.

—Penn. Mining Register.

WARSAW AND ROCKFORD RAILROAD.—At a meeting of the Directors of the Warsaw and Rockford Railroad at Oquawka, on the 18th inst., S. S. Phelps was elected president, and John E. Johnson, vice president. The best feeling pervaded ; the work on the first division is progressing finely. The contractors on the second division from Appanoose to the Junction of the Burlington Road are increasing their forces. Dr. Bacon, the agent, informs us that 15 per cent. of the private stock will be called for on the 1st of July. It is necessary for stockholders to be prompt in their payments, that the work may go on. Negotiations will soon open for iron, rolling stock, etc.—*Ft. Madison Plain Dealer.*



## Miscellaneous and Mechanical.

### TESTING BUILDING MATERIALS

BY PROFESSOR HENRY.

A commission was appointed by the President of the United States, in November, 1851, to examine the marbles which were offered for the extension of the United States Capitol, which consisted of General Totten, A. J. Downing, the Commissioner of Patents, the architect and myself. Another commission was subsequently appointed, in the early part of the year 1854, to repeat and extend some of the experiments,—the members of which were General Totten, Professor Bache, and myself.

A part of the results of the first commission were given in a report to the Secretary of the Interior, and a detailed account of the whole of the investigations of these committees will ultimately be given in full report to Congress, and I propose here merely to present some of the facts of general interest, or which may be of importance to those engaged in similar researches.

Although the art of building has been practiced from the earliest times, and constant demands have been made in every age, for the means of determining the best materials, yet the process of ascertaining the strength and durability of stone appears to have received but little definite scientific attention, and the commission, who have never before made this subject a special object of study, have been surprised with unforeseen difficulties at every step of their progress, and have come to the conclusion that the processes usually employed for solving these questions are still in a very unsatisfactory state.

It should be recollected, that the stone in the building is to be exposed for centuries, and that the conclusions desired are to be drawn from results produced in the course of a few weeks. Besides this, in the present state of science, we do not know all the actions to which the materials are subjected in nature, nor can we fully estimate the amount of those which are known.

The solvent power of water, which even attacks glass, must in time produce an appreciable effect on the most solid material, particularly where it contains, as the water of the atmosphere always does, carbonic acid in solution. The attrition of silicious dusts, when blown against a building, or washed down its sides by rain, is evidently operative in wearing away the surface, though the evanescent portion removed at each time may not be indicated by the nicest balance. An examination of the basin which formerly received the water from the fountain at the western entrance of the Capitol, now deposited in the Patent Office, will convince any one of the great amount of action produced principally by water charged with carbonic acid. Again, every flash of lightning not only generates nitric acid, which, in solution in the rain, acts on the marble, but also by its inductive effects at a distance produces chemical changes along the moist wall, which are at the present time beyond our means of estimating. Also the constant variations of temperature from day to day, and even from hour to hour, give rise to molecular motions which must affect the durability of the material of a building. Recent observations on the pendulum have shown that the Bunker Hill Monument is scarcely for a moment in a state of rest, but is constantly warping and bending under the influence of the varying temperature of its different sides.

Moreover, as soon as the polished surface of a building is made rough from any of the causes aforementioned, the seeds of minute lichens and mosses, which are constantly floating in the atmosphere, make it a place of repose, and by the growth and decay of the microscopic plants which spring from these, discoloration is produced, and disintegration is assisted.

But perhaps the greatest source of the wearing away in a climate like ours, is that of the alternations of freezing and thawing which take place during the winter season; and though this effect must be comparatively powerful, yet, in good

marble, it requires the accumulated effect of a number of years in order definitely to estimate its amount. From all these causes, the commission are convinced that the only entirely reliable means of ascertaining the comparative capability of marble, to resist the weather, is to study the actual effects of the atmosphere upon it, as exhibited in buildings which for years have been exposed to these influences. Unfortunately, however, in this country, but few opportunities for applying this test are to be found. It is true some analogous information may be derived from the examination of the exposed surfaces of marble in their out-crops at the quarry; but in this case the length of time they have been exposed, and the changes of actions to which they may have been subjected, during, perhaps, long geological periods, are unknown; and since different quarries may not have been exposed to the same action, they do not always afford definite data for reliable comparative estimates of durability, except where different specimens occur in the same quarry.

As we have said before, the art of testing the quality of stone for building purposes is at present in a very imperfect state; the object is to imitate the operations of nature, and at the same time to hasten the effect by increasing the energy of the action, and, after all, the result may be deemed but as approximative, or, to a considerable degree, merely probable.

About twenty years ago an ingenious process was devised by M. Brard, which consists in saturating the stone to be tested with a solution of the sulphate of soda. In drying, this salt crystallizes and expands, thus producing an exfoliation of surface which is supposed to imitate the effect of frost. Though this process has been much relied on, and generally employed, recent investigations made by Dr. Owen lead us to doubt its perfect analogy with that of the operations of nature. He found that the results produced by the actual exposure to freezing and thawing in the air, during a portion of winter, in the case of the more porous stones, produced very different results from those obtained by the drying of the salt. It appears from his experiments, that the action of the latter is chemical as well as mechanical.

The commission, in consideration of this, have attempted to produce results on the stone by freezing and thawing by means of artificial cold and heat. This process is, however, laborious; each specimen must be enclosed in a separate box fitted with a cover, and the amount of exfoliation produced is so slight, that in good marble the operation requires to be repeated many times before reliable comparative results can be obtained. In prosecuting this part of the inquiries, unforeseen difficulties have occurred in ascertaining precisely the amount of the disintegration, and it has been found that the results are liable to be vitiated by circumstances which were not in view at the commencement of the inquiries.

It would seem at first sight, and the commission when they undertook the investigation were of the same opinion, that but little difficulty would be found in ascertaining the strength of the various specimens of marbles. In this, however, they were in error. The first difficulty which occurred was to procure the proper instrument for the purpose. On examining the account of that used by Rennie, and described in the Transactions of the Royal Society of London, the commission found that its construction involved too much friction to allow of definite comparative results. Friction itself has to be overcome, as well as the resistance to compression, and since it increases in proportion to the pressure, the stronger stones would appear relatively to withstand too great a compressing force.

The commission first examined an instrument—a hydraulic press—which had previously been used for experiments of this kind, but found that it was liable to the same objection as that of the machine of Rennie. They were, however, extremely fortunate subsequently in obtaining, through the politeness of Commodore Ballard, commandant of the Navy Yard, the use of an admirable instrument devised by Major Wade, late of the United States Army, and constructed under his direction, or the purpose of testing the strength of gun metals.

This instrument consists of a compound lever, the several fulcrum of which are knife-edges, opposed to hardened steel surfaces. The commission verified the delicacy and accuracy, of the indications of this instrument by actual weighing, and found in accordance with the description of Major Wade, the equilibrium was produced by one pound in opposition to two hundred. In the use of this instrument the commission were much indebted to the experience and scientific knowledge of Lieutenant Dahlgreen, of the Navy Yard, and to the liberality with which all the appliances of that important public establishment were put at their disposal.

Specimens of the different samples of marble were prepared in the form of cubes of one inch and a half in dimension, and consequently exhibiting a base of two and a quarter square inches. These were dressed by ordinary workmen with the use of a square, and the opposite sides made as nearly parallel as possible by grinding by hand on a flat surface. They were then placed between two thick steel plates, and in order to secure an equality of pressure, independent of any want of perfect parallelism and flatness on the two opposite surfaces, a thin plate of lead was interposed above and below between the stone and the plates of steel. This was in accordance with a plan adopted by Rennie, and that which appears to have been used by most, if not all, of the subsequent experimenters in researches of this kind. Some doubt, however, was expressed as to the action of interposed lead, which induced a series of experiments to settle this question, when the remarkable fact was discovered, that the yielding and approximately equable pressure of the lead caused the stone to give at about half the pressure it would sustain without such an interposition. For example, one of the cubes, precisely similar to another which withstood a pressure of upwards of 60,000 pounds when placed in immediate contact with the steel plates, gave way at about 30,000 with lead interposed. This remarkable fact was verified in a series of experiments, embracing samples of nearly all the marbles under trial, and in no case did a single exception occur to vary the result.

The explanation of this remarkable phenomenon, now that it is known, is not difficult. The stone tends to give way by bulging out in the centre of each of its four perpendicular faces, and to form two pyramidal figures, with their apices opposed to each other at the center of the cube, and their bases against the steel plates. In the case where rigid equable pressure is employed, as in that of the thick steel plate, all parts must give way together. But in that of a yielding equable pressure, as in the case of interposed lead, the stone first gives way along the lines of least resistance, and the remaining pressure must be sustained by the central portions around the vertical axis of the cube.

After this important fact was clearly determined, lead and all other interposed substances were discarded, and a method devised, by which the upper and lower surfaces of the cube could be ground into perfect parallelism. This consists in the use of a rectangular iron frame, into which a row of six of the specimens could be fastened by a screw at the end. The upper and lower surfaces of this iron frame were wrought into perfect parallelism by the operation of a planing machine. The stones being fastened into this, with a small portion of the upper and lower parts projecting, the whole were ground down to a flat surface, until the iron and the face of the cubes were thus brought into a continuous plane. The frame was then turned over, and the opposite surfaces ground in like manner. Care was of course taken that the surfaces thus reduced to perfect parallelism, in order to receive the action of the machine, were parallel to the natural beds of the stone.

All the specimens tested were subjected to this process, and in their exposure to pressure were found to give concordant results. The crushing force exhibited in the subjoined table is much greater than that heretofore given for the same material.

The commission have also determined the specific gravities of the different samples submitted



to their examination, and also the quantity of water which each absorbs.

They consider these determinations, and particularly that of the resistance to crushing, tests of much importance, as indicating the cohesive force of the particles of the stone, and its capacity to resist most of the influences before mentioned.

TO BE CONTINUED.

#### NORTH CAROLINA COAL.

We availed ourselves, on Saturday, of a polite invitation from Mr. Burns, to examine specimens of coal from the Deep River mines, which he is daily using. The coal is a fine bright bituminous coal, free from all impurities, burns well, and leaves very little ash.—One of the hands at the forge told us that two bushels of the Deep River Coal were worth as much as three of the Virginia Coal. We understand that one of the companies on Deep River have expended \$270,000 in opening their mine, and they are now prepared to raise a ton a minute, and furnish it at nearly half the price of Northern Coal. Indeed Mr. Burns is so well convinced of the superiority, cheapness and excellence of the Chatham Coal, that he is using it exclusively, hauling it from the mines, ten miles distant, in wagons. All these mines need is an outlet.—They can supply enough to keep the road from Fayetteville, the navigation company on the Cape Fear and Deep River, and a road from the mines to this place busy all the time. Indeed we learn that the Superintendent of one of the mines says that he is prepared to load five hundred cars daily. Ought not every facility to be extended to these mines for getting off their coal in all directions.—*Star*.

CINCINNATI AND MACKINAW R. R.—A meeting of citizens of Lansing and Hillsdale, and others interested in the building of a railroad from Amboy, via Hillsdale and Lansing, to Traverse Bay and Straits of Mackinaw, was held at the National Hotel, in the city of Detroit, on Monday, the 23d inst. The meeting organized by the election of Hon. JOHN P. COOK, of Hillsdale, Chairman, and EDWIN R. MERIFIELD, of Lansing, Secretary.

The following named gentlemen were present as delegates from Hillsdale county: John P. Cook, D. L. Pratt, F. M. Holloway, A. Cressey, William Waldron, C. J. Dickerson, D. Beebe, L. A. Bostwick, H. H. Sherman, C. W. Ferris, Hon. R. Gardner, Jno. C. Robertson.

From Ingham county, J. C. Bailey, James Turner, V. S. Murphy, J. W. Longyear, Benj. Hart, J. L. Bair, John Thomas, E. R. Merrifield, Wm. H. Chapman.

From Eaton county, Amos Hamlin, from Clinton county, Hon. John Swegles.

The Chair briefly stated the object of the meeting, which was then addressed by Hon. H. H. Emmons, and others.

On motion of Mr. Pratt, of Hillsdale, a committee of eleven was appointed, for the purpose of collecting subscriptions, &c. The following named gentlemen were appointed as such committee:

D. L. Pratt and F. M. Holloway, Hillsdale; R. Gardner, Jonesville; H. C. Hodge, Concord; M. A. McNaughton, Jackson; A. Hamlin, Eaton Rapids; J. Bailey and Wm. H. Chapman, Lansing; John Swegles, St. John's; J. H. Adams, Dewitt.

A committee consisting of Jon. W. Longyear, H. H. Emmons, and C. J. Dickerson, was appointed to draft Articles of Association, and were instructed to report the same at the next meeting. On motion the meeting adjourned.—*Hillsdale Gazette*.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extended over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance*.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, JULY 22, 1856.

### RAILROAD RECORD.

E. D. MANFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, --- TUESDAY, JULY 22.

#### THE TEXAS PACIFIC RAILROAD.

Time is said to prove all things, and it is proving nothing more completely, more absolutely, than that we *must* have a Pacific Road. Nor is it doubtful where *one*, if not all of the Pacific Roads we shall ever have must be. The advantages of distance, climate, and cheapness are so decidedly in favor of the route on the 32° of latitude, that it is impossible to avoid that, whatever may be done for others. We confess to a feeling of some anxiety in reference to the action of Congress on this subject. Why is the matter delayed? Why cannot a little time be given to business as well as politics? Congress, some two months since, passed grants of land to roads in Iowa and Minnesota, on the ground that these roads should tend to a common point, on the Platte river, and thence proceed by a common trunk to the Pacific; but to stop at these grants does nothing, and they might as well not have been made, so far as the Pacific Road is concerned. Why not take up the subject and *do something*? We believe there is little difference of opinion now, as to what ought to be, or can be done. The only difficulty is to get *action* on the subject. In making the grants she made to Iowa, Michigan and Minnesota, Congress has conceded the *principle* that it is in this mode the Pacific Road can be aided. It would require little time to act on the subject—and so much investigation and so many surveys have been made, that to stand still is not only unwise, but absolutely absurd. The surveys and explorations of the United States for the Pacific Road have already cost, we believe, at least \$200,000; and are these all to go for nothing? Let us see what has been clearly established by these surveys:

1. It has been demonstrated that a railroad to the Pacific can be easily made.
2. That it can be made on three different routes, without tunneling the mountains.
3. That the cost will be from \$90,000,000 to \$160,000,000.
4. That the cheapest route is the Texas route, by from \$35,000,000 to \$50,000,000.
5. That the northern routes are at least doubtful, as to the capacity of transportation in the period of winter, ice and snow. Of

the Texas route there is no doubt. No interruption from such causes can occur on the Texas route.

These facts present a case which makes the Pacific Road not only practicable, but makes its construction an urgent duty. If for one hundred and fifty millions a railroad can be made to the Pacific, why in the name of common sense should it not be done immediately? It is not necessary to enter into any statistical and commercial details to prove that in the saving of time and money, and in the increase of commerce the United States would gain half the cost in a single year. It is true this would not all come into the treasury of the government; nor into the pockets of the company; nor into that of merchants wholly; but all would share in it; and we take it such are the precise cases which make such legislation national, proper, and necessary to the public prosperity. A railroad to the Pacific is one of those great measures in which a whole country is interested, and not merely a class, or State, or a section. More than that, the whole world is interested in such a work, and it is a case in which we can afford to do something for the welfare of mankind. Congress should turn aside for a day or two from its constant discussion of politics, and find a ground of harmony and common feeling in a great measure of legislation for the welfare of the nation and the benefit of mankind. Why not? When the members shall have retired to their homes—when in old age the party disputes of the day are forgotten, and all its controversies cast into oblivion, they will remember with delight that they contributed to such a measure of humanity and progress. The laurels of such a victory in the great battle of life will grow green and bloom when all others in public action have faded. Let the members of Congress think what it is to inscribe their names on the greatest monument of the age, to be borne to immortal fame by every car which crosses the mountains!

WARSAW AND ROCKFORD RAILROAD.—At a meeting of the Directors of the Warsaw and Rockford Railroad at Oquawka, on the 18th inst., S. S. Phelps was elected president, and John E. Johnson, vice president. The best feeling pervaded; the work on the first division is progressing finely. The contractors on the second division from Appanoose to the Junction of the Burlington Road are increasing their forces. Dr. Bacon, the agent, informs us that 15 per cent. of the private stock will be called for on the 1st of July. It is necessary for stockholders to be prompt in their payments, that the work may go on. Negotiations will soon open for iron, rolling stock, etc.—*Ft. Madison Plain Dealer.*

#### CINCINNATI—HER GROWTH, HER PRESENT, AND HER FUTURE.

Our city is peculiarly and favorably situated for the building up of the greatest inland town on the continent of America. With a growth of but half a century, she has now attained a size and importance almost equal to her sister cities of the Atlantic seaboard, that have had from two to three centuries the start of her, with the boasted advantages of foreign trade and commerce. Not that we would speak lightly of the benefits of commercial intercourse with foreign countries, but of the advantages of a producing community—of labor, industry, energy and enterprise.

Situated geographically near the center of our country, resting on the bosom of the noblest river that waters any country on the face of the globe—whose arms extend from the Alleghenies to the Rocky Mountains, and whose waters flow from the frigid regions of the North till they mingle with those of the tropics—engorged almost with the teeming fertility of the valleys, and emburdened with the mineral wealth of the surrounding hills why should not Cincinnati become a great city?

At one moment many were fearful and jealous of the rapid development of some other points that were forced into almost magic growth by the centering of great railroad systems within their limits. In this we are constrained to admit that Cincinnati has received a slight stay in her onward flight to the summit of her excellence. It is, however, but temporary. It will be but a short time before the net work of her railroads will be completed, and we will be but a few hours' ride from any portion of the Union.

We look forward to the time when we will be brought into as immediate and direct connection with New Orleans, Mobile, Charleston, Pensacola, Mackinaw, St. Louis, and all the vast and mighty West, as we are now with the Eastern cities. All true lovers of our city's welfare will use every effort to aid in the completion of those great works, now in progress, that will thus develop the resources and wealth with which we are surrounded.

Cincinnati, in the future, will make more rapid strides towards pre-eminence than she has heretofore, and by 1860 the census will show the truth of what we assert.

Next spring we shall have the Ohio & Mississippi and the Marietta & Cincinnati Railroads completed; both great outlets, East and West, as the central ones of the Ohio valley. Then will come the Lexington &



Danville, and we trust its connection with all the South. The direct Chicago line is fast progressing. The Government has made such a grant of lands to the Cincinnati & Mackinaw line as will, we think, secure its completion. This, as a strictly Northern line, will be more important to Cincinnati than any other in that direction. A great city will arise at the Straits of Mackinaw, which will become a commercial depot for the products of that Northern country—and from that city they will be interchanged with those of the South, through Cincinnati. The year 1856 is a new era of progress with this city, and we shall hereafter digest for the *Record* a series of statistical facts, showing the advantages of this city as a place of deposit and purchase of all that great amount of material and machinery used in railroads. In regard to iron and its fabrics there can be no question. No place in the United States has such facilities for all fabrics of iron as Cincinnati. This is one great cause of our rapid growth, and we shall endeavor, in other numbers, to give the statistics of this business.

[From the Galveston News.]

#### GALVESTON, HOUSTON & HENDERSON R. R.

By invitation of Capt. Chapman, agent for the G. H. & H. R. R. Company, we have taken an excursion over their railroad as far as the grading has been completed, which is about four miles beyond Clear Creek and within twelve miles of Harrisburg. Capt. Chapman has expressed a wish that we should make a plain statement of facts in regard to the work done &c., as far as has come within our knowledge, for the information of the public, and we accordingly proceed to do so in as few words as possible. We left Galveston on Tuesday evening about sunset, by the ferryboat, and proceeded by delightful moonlight and a pleasant breeze to Virginia Point, a distance of six miles, in about one hour and a half. We passed the night at the splendid mansion of Judge Wm. J. Jones, which has been built since our last visit to that place, and which in point of architecture, size and convenience of arrangement is surpassed by very few if any buildings in this city. We made an early start, at 3 o'clock, the next morning, with a horse and buggy, and following the railroad grade, at an easy gait, we arrived at Clear Creek, about 11 o'clock, where we found two sets of hands at work, one being employed in cutting through the slightly elevated ground on the east side of the Creek, and hauling the earth in carts to make an embankment in the bottom or lower ground next to the stream. The other company of laborers were engaged in building heavy tressel work to connect this embankment with the bridge over the Creek, which bridge was already completed. Passing over the bridge, we found another heavy embankment on the other side, extending on a level with the hridge to the high ground beyond. At this point we found a comfortable and substantial depot and other buildings, where Mr. Converse, the Chief Engineer, invited us to make ourselves at home, and we accepted the invitation in the most literal sense, for we have rarely found ourselves more at home anywhere. Here we passed most of the day,

enjoying the hospitalities of Mr. Converse, and examining the road beyond Clear Creek. The road is perfectly straight the entire distance, and will be so continued till it reaches Harrisburg which is 36 miles from Virginia Point, there not being the slightest curve that whole distance. We understand there is but one other railroad in the United States that is without a curve for so great a distance. This beautiful grade therefore being nearly a perfect level, as well as without curve, can be seen as far as the eye can reach, until it is finally lost in the distant horizon. The grading is now completed 24 miles from Virginia Point, and a better piece of work we have rarely ever seen. Some of it has been thrown up for over two years, and yet we could no where perceive that it had been washed or injured in the least by the rains, but on the contrary, it has settled down and become perfectly compact.

The contractors have now at work, grading, between fifty and sixty men, besides several horses and carts, and will have the embankment of the first division of 25 miles completed by the 10th or 15th of July. Eleven miles further a connection will be made with the Harrisburg Railroad.

Great care has been taken by Mr. Converse the Chief Engineer, in establishing the ditch grades, in order to drain the surface water, from the base of the embankment and convey it to the creeks and sloughs by lateral ditches. The grades on the first 25 miles are: Ten miles, between 0 and 5 feet per mile; 8 miles between 5 and 10 per mile; 2 miles between 10 and 14 per mile; 5 miles level grade—maximum grade 14 feet per mile. Bridges—Moses Bayou 35 feet long; Dickinson Bayou 343 feet long; Clear Creek 235 feet long; also a bridge across Clear Creek bottom 900 feet, which is more than half completed, and will be finished about the 20th of July.

A wharf at Virginia Point 540 feet long, will be ready in about ten days to receive locomotive, cars, spikes, chairs, and other material for the road, which are purchased and shipped. The above named bridges are of the most substantial kind; Messrs. Hooper and McDermott have the contract for building them.

T Rail iron, weighing 54 lb. per yard is in the Custom warehouse, the iron and freight is paid for and the agent is advised that he will receive money in the course of a short time, to pay duties on the iron. There is now at Virginia Point a quantity of ties or sleepers, sufficient for twenty-six miles of road.

[From the Cincinnati Enquirer.]

#### RAILROAD TO CALIFORNIA.

"It is seriously proposed to secede from the Union, because the Administration pay no kind of attention to our wants. One more appeal, and if that fails, then strike our star off the national flag."

The above is an extract from a late California letter, and there is no doubt a good deal of truth in it. Until the Pacific Railroad is built, the position of California in the Union will be isolated and disagreeable. Away thousands of miles from the Atlantic coast—with no facilities of reaching it except by traveling over an unusually circuitous and dangerous route, through a foreign land, which takes weeks to accomplish—it would be strange, indeed, if our fellow citizens of California were not discontented with their position, and if their patriotism for the Union did not suffer a considerable abatement. Califor-

nia is not really and practically in the Union, as things are now. She is most emphatically an outside member of the confederacy.

Unless some steps are taken to build the railroad before long, the grumbling and discontent on the Pacific coast will take an organized form of rebellion and secession—With a railroad across the continent, California would be as indissolubly connected in fortune and interest with the rest of the confederacy as Ohio, and the idea of a Pacific confederacy would be abandoned.

The absolute necessity of the road is such that all the late political conventions of the rival parties have declared for it, and urged upon the General Government the necessity of devising some plan to complete it. In our Congressional proceedings we find the following relating to this subject:

"The special committee agreed this morning to report a bill making a grant of land to the Southern Atlantic and Pacific R. R. Company. The bill will meet the approval of the country, and should be passed through Congress without delay. The bill provides for three roads—one north of the forty-fourth parallel, one between the thirty-eighth and forty-fourth, and one south of the thirty-eighth parallel."

#### THE GOLD PRODUCT OF AUSTRALIA AND CALIFORNIA COMPARED.

From a series of elaborate statistical tables prepared by Mr. Khull—for the last four years a bullion broker in Melbourne—and published with editorial indorsement in the latest copy of the Melbourne *Herald* received, the San Francisco *Herald* gives the total yield of the Victoria gold mines for the year 1855.

An analysis of these tables shows:

|   |           |
|---|-----------|
| The quantity of gold dust brought to Melbourne and Geelong, by escort, in 1855, ounces..... | 2,194,941 |
| Brought by private hand.....  | 634,434   |
| Total.....  | 2,829,375 |

#### SHIPMENTS OF GOLD AS PER CUSTOMS RETURNS.

|                         |           |
|-------------------------|-----------|
| From Melbourne.....ozs. | 2,615,675 |
| From Geelong.....       | 28,002    |
| From Port Fairy.....    | 1,000     |
| Total.....              | 2,674,677 |

#### PORTS TO WHICH SHIPPED.

|                         |           |
|-------------------------|-----------|
| To England.....         | 2,188,150 |
| To India and China..... | 142,413   |
| To Sydney.....          | 12,049    |
| To America.....         | 1,448     |
| To Adelaide.....        | 393       |
| To Tasmania.....        | 200       |
| To New Zealand.....     | 4         |
| Total.....              | 2,674,677 |

|   |             |
|---|-------------|
| Estimated value.....                    | £10,698,708 |
| Quantity which has evaded duty.....ozs. | 56,768      |

#### AMOUNT OF GOLD REMAINING AT 30TH DEC.

|   |         |
|---|---------|
| In the treasury.....                      | 58,627  |
| In the banks.....                         | 152,036 |
| In the camps.....                         | 150,948 |
| In private hands.....                     | 10,000  |
| In hands of diggers and storekeepers..... | 50,000  |
| In transitu from gold fields.....         | 51,533  |
| Total ounces.....                         | 473,144 |

#### PRODUCTS OF THE GOLD FIELDS, AS SHOWN BY ESCORT RECEIPTS.

|  |           |
|--|-----------|
| Castlemaine and its districts.....ozs. | 407,640   |
| Bendigo and district.....              | 451,582   |
| Maryborough, Avoca, &c.....            | 352,726   |
| Ballarat and district.....             | 784,003   |
| Ovens district.....                    | 198,920   |
| Total ounces.....                      | 2,194,941 |

Besides the amount specified, Mr. Khull estimates that there were taken by private hand to Adelaide, 7,500 ounces; to Sydney, 35,900 ounces; to Tasmania, 3,273 ounces. These tables show:



|   |              |
|---|--------------|
| Total produce for 1855.....ozs.   | 3,349,287    |
| Less quantity on hand December 31, 1854...  | 285,214      |
| Net produce for 1855.....   | 2,964,073    |
| Value, at 80 shillings per ounce.....   | £11,856,292  |
| Equal to.....   | \$57,284,435 |
| The amount actually exported from Victoria in 1855, as per customs returns, was 2,674,677 ounces. The average price in Melbourne was 80 shillings, or \$19 36 per ounce. This would give a total value to the exports of..... |              |
| Exported in 1855 from California.....   | \$51,791,749 |
|   | 45,192,600   |
| Difference in favor of Australia.....   | \$6,599,149  |

It must be borne in mind that the Australian records employed above include only the shipments from the colony of Victoria. Those from New South Wales (Sydney) are not accessible. They are, however, comparatively small.

The following table shows the comparative exports of gold from Victoria and California during the last four years:

| Years.                | From Victoria. | From California. |
|-----------------------|----------------|------------------|
| 1852.....             | \$33,456,080   | \$45,779,000     |
| 1853.....             | 49,332,632     | 53,966,956       |
| 1854.....             | 41,323,270     | 51,506,133       |
| 1855.....             | 51,791,749     | 45,192,600       |
| Total...\$172,104,731 |                | \$196,444,694    |
|                       |                | 172,104,731      |

Excess in favor of California: \$24,339,963

The shipments from Sydney (New South Wales) during the same years, not included in the above, would about equal this difference, making the total exports of gold from the whole of Australia, during the past four years, about the same as from California. In round numbers, \$300,000,000 has been exported from each of the rival gold countries in four years—making an addition of \$400,000,000 in that time to the circulating medium in the Atlantic States and Europe.

In estimating the total value of the gold produced by Australia, the ounce is fixed at 80 shillings, or \$19 36, while the California gold is estimated at only \$17 50 per ounce. It would seem from this that the number of ounces of gold exported from our State has been very much larger than the number from Australia, although the value is nearly the same.

Mr. Khull gives also the following statistics of the arrivals and departures during the year 1855:

|   |        |
|---|--------|
| Arrivals.....   | 66,519 |
| Departures.....   | 26,395 |
| Excess of arrivals.....   | 40,124 |
| Arrivals overland from Sydney and Adelaide, and estimated increase from births..... | 10,000 |
| Total increase of population.....   | 50,124 |

The weekly arrival of emigrants in 1855 amounts to 1,200, against 1,500 in 1854; while the departures from the colony show that 500 weekly have emigrated, against 600 in 1854.

In commenting upon these statistics, the Melbourne Herald says:

"It has been argued that the yield of gold, as compared with the number of persons now in the colony, showed a less remunerative rate per head than in previous years; whereas Mr. Khull, by careful investigation, establishes the fact that while the increase to our population for the past year has been at the rate of 20 per cent. over the year 1854, the increase in the gold produce during the same period has been at the rate of 35 per cent. Again, from the multiplicity of experiments reported in quartz-crushing, speculations have been indulged in that the old fashioned mode of obtaining the gold was rapidly declining, and that it was to quartz-crushing operations

that we are indebted for sustaining our auriferous produce. Yet Mr. Khull vouches for the fact, as based upon diligent inquiries, that quartz-crushing during the past year has only added about 20,000 ounces, or scarcely the one hundred and fiftieth part of the gross yield, to the whole amount of gold raised in the colony. This is not a very gratifying result to the successful crushers; but with the evidence that exists of the high remunerative character of our quartz reefs, under a more perfect and economical system, it is a circumstance for great rejoicing to the colonists, as showing that this branch of their auriferous wealth is hitherto scarcely touched, and remains to be added to the alluvial gold produce; while it shows that the latter is vastly increasing in amount, instead of becoming 'small by degrees and beautifully less.'"

#### ROUTE TO CALIFORNIA.

We give below two articles on the privations of passengers whose business compels them to travel the hazardous and circuitous routes now the best we have. They tell the old story, of over-crowded steamers and tropical epidemics. And yet, in the face of this cry, that has gone up for years from thousands, and among them many of the distinguished men of the nation, Congress still hesitates to grant a pittance of its now worthless lands to build an overland route, when the traveler would be free from such dangers and annoyances.

#### GREAT SUFFERING AMONG THE CALIFORNIA PASSENGERS, BY WAY OF NICARAGUA—ONE HUNDRED AND TWENTY DEATHS.

The *True Californian* gives the following account of the dreadful sufferings endured by the passengers who left New York in April last for California via Nicaragua:

The steamer *Orizaba* left New York on the 8th of April, with some 500 passengers for California, by way of Nicaragua. On the 16th, she arrived at San Juan, and the passengers disembarked. By means of open boats they started up the river, during a soaking rain.—The exposure caused them much suffering. When they arrived at Castilla, they were informed that the transit across the country was closed; and after two days delay, during which they were constantly exposed to the weather, they were told that if they chose, they could return to New York, but only fifteen minutes were allowed them; and as they were compelled to abandon their baggage in case they concluded to go, three hundred determined to push on.

They were taken to Granada, where they were detained a month, notwithstanding that an epidemic was prevailing there. Here the most fearful disease commenced to rage among them. In four weeks seventy-nine of the three hundred were cured. During the time they suffered every privation—many were without means, and those who had money were compelled to put up with extortion and robbery at every hand.

On the 20th May in the evening, news reached Granada of the arrival of the *Sierra Nevada*, at San Juan del Sur, and three hours were given the surviving passengers, sick and well, to get on board the Lake steamer. At the time it was pouring rain and pitch dark. The sick were carried down, in the best manner possible, all getting thoroughly drenched.

Upon reaching the landing of the Lake steamer, they were kept in the rain until all had exhibited their tickets, which detained them several hours. Finally, all were crowded on board; but before morning, three of the sick died, and were sent on shore.

On the Lake steamer the scene is described as having been dreadful. The passengers were crowded together like sheep in a pen. There was scarcely room for the sick to lie down.—For nineteen hours they were thus confined, suffering every torture of body and of mind; several poor wretches gave up the ghost on the boat, and others died while attempting the journey from the Lake to San Juan.

After they embarked in the *Sierra Nevada*, the sickness broke out again, and during the passage from San Juan to this port thirty-three deaths occurred.

The sufferings on the *Sierra Nevada* beggars all description. The officers of the steamer did all in their power to alleviate their sufferings, but that was little. No time was lost in disposing of the dead, and the body was hardly allowed to get cold before it was thrown overboard. The safety of the living demanded that there should be no unnecessary detention of the dead.

#### HARD TIMES ON THE ROUTE TO CALIFORNIA. THE CAPT. OF THE ILLINOIS ARRESTED.

The following we clip from the *New York Times* of Thursday:

For a long time there has been serious complaints made by passengers on steamers leaving this port for California, of the excess of passengers taken on board. Occasionally indignation meetings of the passengers have been held, expressing their dissatisfaction at the gross injustice and imposition to which they have been subjected. The excessive deprivations to which the passengers of the *Illinois* had to submit, on her last trip out, has led to more energetic action. Yesterday, Mr. Horton, U. S. Deputy Marshal, arrested Capt. Boggs of the *Illinois*, and he was held to bail in the sum of \$16,000 to answer the complaint brought against him. Ex-Governor McDougal of California, and ex-Marshal Turkey, of Boston, passengers on the *Illinois* were the leading complainants.

They state that the whole number of passengers on board the *Illinois* was 925. Owing to such a large number being on board, they suffered every imaginable inconvenience. Ladies had to sleep in the cabin under tables and chairs. The steerage passengers could not all be accommodated in their cabin, and a large number were compelled to sleep on deck. A good many ladies who took steerage passages, and were thus compelled to stay out on deck, had to beg gentlemen in the first cabin to let them occupy their births in the day time, that they might get a little sleep.

It seems that a steamer of the dimensions of the *Illinois* is allowed to carry only about 600 passengers. The law makes the company liable to the payment of \$50 for every passenger over this number carried.

MEMPHIS, CLARKSVILLE & LOUISVILLE R. R.—Ground was broken on this road at the town of Clarksville, on Monday, June 23. No previous notice had been given, but a large company of the citizens of Clarksville were there, and the commencement of work was made in a formal manner.



## NEW ENTERPRISE IN WISCONSIN.

The Appleton *Crescent* of June 7th, gives the following account of a meeting held in that place on June 4th, to consider the subject of a railroad connection between Oshkosh and Appleton. The meeting seems to have been both large and enthusiastic, and strong feeling was manifested for the road. The *Crescent* says:

At a large and enthusiastic meeting of the citizens of Appleton, held at the Court pursuant to call, on Wednesday evening, June 4th, Wm. H. Sampson was chosen President, Messrs. H. L. Blood, R. R. Bateman and Jas. M. Phinney, Vice Presidents, and S. Ryan, Jr., Secretary.

The objects of the meeting having been briefly stated to be for the purpose of eliciting an expression of the views of the people in reference to obtaining a Railroad Connection with Oshkosh, Fond du Lac and Chicago, by means of the main trunk railway to Lake Superior, the Committee on resolutions introduced a preamble and resolutions which, after being amended, were discussed by Messrs. Mason, Buck, Ryan, Blood, Bateman, Everts, Sampson, Phinney and Hanna, and *unanimously* adopted by a standing vote as follows:

Whereas, it satisfactorily appears to the citizens of Appleton that it is for the mutual interest of this section of country and the railroad company which shall obtain the grant of lands just made by Congress for the construction of a railroad from Fond du Lac, on Lake Winnebago, to the copper and iron regions on Lake Superior, to have said road built to Neenah and Appleton, inasmuch as these towns will be almost in the direct line of the main trunk road, thus touching at points which promise to be the two greatest manufacturing points in Wisconsin, they having as is everywhere confessed the largest water powers in the west, thus providing immediate and permanent business for the road; and whereas we, the citizens of Appleton are fully convinced from a knowledge of the country the ability and disposition of the people living along the line of said road between Oshkosh and Appleton, as well as the nature of the country traversed thereby, that a railroad can be built very cheaply and that no inconsiderable amount of means can be raised to aid in its construction; and whereas we are desirous of having said enterprise commenced and prosecuted with all possible dispatch, therefore,

*Resolved*, As the sense of the people of Appleton, that we are in favor of the grant of lands being given to the company for whom it was designed, and which company was mainly instrumental in its procurement, the Chicago, Fond du Lac & St. Paul Railroad said road to early completion and because Company, because we are well satisfied that said Company are using every exertion to push they alone are best entitled to remuneration for the enterprise they have thus far shown in the prosecution and management of their road and its affairs.

*Resolved*, That we are anxious to have the railroad extended to Appleton with all possible dispatch; and to further this object are willing to labor and vote for the issuance of the bonds of this County or of Appleton, as may seem most desirable to secure the object sought for, to an amount not exceeding one hundred thousand dollars, to be applied for that purpose, provided the regular payments

of the interest thereupon is secured by the Railroad Company in like manner as they have done in other towns and counties of our State; and we also pledge ourselves to raise such additional stock by private subscriptions as it shall be in our power to do, and to spare no other necessary effort to aid in the immediate construction and extension of said road to this point.

*Resolved*, That a Committee of nine of which the president of this village shall be chairman, be appointed to open negotiations with the president and directors of the Railroad Company with reference to the survey and establishment of the line of said road to Appleton, and the commencement of work thereupon; and that said committee be authorized and empowered to confer with the authorities and citizens of Neenah and other towns interested with reference to the furtherance of this mutually desirable object. Also—that said committee be directed to call future meetings whenever they may deem it expedient so to do.

*Resolved*, That we take this public method of tendering our thanks to Messrs. Darling, Bradley and Johnson, directors in said railroad company, for the valuable information derived from them in reference to the affairs and condition of the Chicago, Fond du Lac and St. Paul Co., during their short visit to our place on Monday last.

*Resolved*, That the proceedings of this meeting, signed by its officers, be sent to the newspapers in Appleton and Neenah with a request for their publication; and that copies be forwarded to the president and directors of the Railroad Company, and to our State Senator and Member of the Assembly.

On motion, the meeting proceeded to elect the remaining members of the committee provided for under the third resolution: whereupon Messrs. R. Z. Mason, P. H. Smith, S. Ryan, Jr., Theo. Koukey, H. L. Blood, James Gilmore, Edward West and Jno. Stephens were duly chosen.

Edgar Conkling, Esq., of Green Bay, was then called for and responded in a few pertinent remarks warmly in favor of the views of the meeting, and assuring the audience that Green Bay would in all likelihood run her Branch Road, with the aid promised by the Lake Superior Company, directly to Appleton; a statement which elicited much applause.

And then, amid general expressions of good feeling, the meeting adjourned to reassemble at the call of the committee.

W. H. Sampson, Pres't.

H. L. Blood, R. R. Bateman, } V. Pres'ts.  
Jas. M. Phinney, }  
S. Ryan, Jr., Sec'y.

**MANITOWOC & MISSISSIPPI R. R.**—At the annual meeting of the Stockholders of this Company, at Manitowoc, on the 7th inst., the following Directors were elected: Charles Cain, of Milwaukee; Benj. Jones, of Chicago; Joseph Turner, Charles Doty, Menasha; Jarvis F. Platt, Jacob Lieps, S. A. Wood, E. D. Beardsley, M. Fellows, Manitowoc.

At a meeting of the Directors subsequently, Charles Cain was elected President of the Company, S. A. Wood, Vice President, Charles Esslinger, Treasurer, A. Ten Eyck, Secretary.—Seven and a half miles of this road are to be completed by the 18th of next November.

**THE COTTON TRADE.**—From a late document relating to the cotton trade, prepared by Edmund Flagg, superintendent of the Statistical Office, at Washington, and communicated by Mr. Marcy to the House of Representatives, we give a few items which may be of interest to those who think the whole world and the rest of mankind are entirely dependent upon the United States for cotton.

The average amount of cotton exported from the United States to Great Britain, from 1851 to 1855, inclusive, was 661,529,220 lbs. The amount received from the East Indies in the same time was 122,411,928 lbs., which is about one fourth of the amount received from the United States.

From 1840 to 1850 Brazil increased her exports of cotton to Great Britain from 14 to 30 millions pounds—round numbers; Egypt from 8 to 18 millions, and the East Indies from 77 to 118 millions.

We learn from other sources that France is furnishing the strongest possible inducements to cotton growing in Algeria by giving premiums amounting to about \$100,000 annually, and is in the expectation of soon getting all her cotton from there. On the completion of the great lines of railroads now in progress in India, it is estimated that the exports of cotton from there will be greatly increased.

**THE LOCOMOTIVE EXPLOSION ON THE ROANOKE RAILROAD.**—It has been briefly stated that the locomotive of a large passenger train which had started from Clarksville, Virginia, on the Roanoke Valley Railroad, to attend a political meeting, burst her boiler when near Lynesville, killing the engineer and two firemen instantly, and badly wounding several others. An eye-witness says: The engineer was blown into fragments, and portions of his body found one hundred yards from the scene of disaster. The boiler was thrown forward thirty yards or more, one end striking directly upon the track, bending and breaking the iron rail and making a deep hole in the embankment. It then bounded into the air again, alighting once more upon the track, breaking the rail and tearing it up. It again bounded forward, turning a somersault in its course, and lodged on the side of the embankment. I learn that a gentleman present stepped off the distance and estimated that it was thrown about ninety yards. The cow-catcher, which was of the old model, made of huge iron bars, was forcibly wrenched from its fastenings and thrown fifty yards further.

Mrs. Rudd, the young wife of the unfortunate engineer, was on the cars, and when the dead body of her husband was found rent the air with piteous shrieks that smote sadly indeed on every heart.

**ANNUAL MEETING OF STOCKHOLDERS OF THE MANITOWOC & MISSISSIPPI RAILROAD COMPANY.**—At the Annual Meeting of the stockholders of the M. & M. R. R. Co., held in this village at the office of the Secretary, on the 7th inst, for the election of Directors, for the ensuing year, the following named gentlemen were duly elected: Charles Cain, Milwaukee, Benjamin Jones, Chicago, Joseph Turner, Charles Doty, Menasha. Jacob Leips, Jarvis E. Platt, Sylvester A. Wood, Ed. D. Beardsley, Michael Fellows, Manitowoc. The Directors elect immediately after their election, organized the new board, by the election, of the following persons to the respective offices named: Chas. Cain President; S. A.



Wood, Vice-President; Chas. Esslinger, Treasurer; A. Ten Eyck, Secretary.

So far as we are able to Judge, the result of this election is highly creditable to the stockholders, and satisfactory to a very large majority of the citizens of this and the surrounding community. The Board, we learn, ordered the re-opening of the stock subscription books, at the office of the Secretary, when several thousand dollars were at once subscribed to the capital stock of the company. They also determined to finish the first eight miles of the road, from this place to "the Branch," so called by the first day of November next, and have the locomotive running upon it.

The Secretary was directed to issue a further call to the stockholders, requiring the payment of five per centum on all the stock subscriptions, every month, commencing on the 20th of September next.

**THE SOUTHERN RAILROAD CONVENTION.**—The Richmond Despatch contains the closing proceedings of this body. We copy the following:

The committee on fixing the price of a through ticket between Washington and New Orleans, reduced the price to \$48. The former price was \$53. The report of the committee was adopted.

A resolution was adopted, fixing the rate of speed on the roads, exclusive of stoppage, at 20 miles per hour.

A discussion very generally participated in, took place with regard to the express business on railroads, and the propriety of the roads taking it into their own hands. No resolution was adopted, as it was argued that each company could control the matter to its own interest.

A committee of three was appointed to confer with the officers of the roads north of Weldon, and urge the re-establishment of the second train on Sunday.

A committee was also appointed to collect information upon the most feasible plan for the construction of a southern railroad to the Pacific, and to inquire into the practicability of the construction of a road on which the greatest possible expedition between the Atlantic and the Pacific can be attained.

Capt. Wm. B. Phillips was appointed the New Orleans agent of the several roads, at a yearly salary of \$5,500, out of which he is to do all the advertising of the route.

Several other matters were disposed of, when the convention adjourned to meet next May at Augusta, Georgia.

### THE CROPS AND THE PROSPECTS.

The extreme cold of winter and the drouth of spring, threatened, in regard to the Miami country, at least, almost the destruction of our cereal crops. When the spring advanced, however, it was evident the wheat had not suffered materially. It was ready for harvest early in July, and is one of the largest and best gatherings of wheat made in the Miami valley, for many years.

The corn was exceedingly unpromising down to the 1st of July. Indeed it seemed that some fields would scarcely produce anything. Since the showers and the hot sun, the whole face of affairs is changed. Corn now promises an average crop. Oats and grass are, however, so far, rather inferior. This will be made up by the fall crops. Those who have spare ground should plant turnips and corn, broad-cast, for fodder.

### [From the Lond. Civ. Eng. & Arch. Jour., May, 1856] ON STEEP GRADIENTS OF RAILWAYS, AND THE LOCOMOTIVES EMPLOYED.

By CHAS. R. DRYSDALE, Assoc. Inst. C. E.

Read before the Institution of Civil Engineers, April 8th, 1856.

The object of the paper was to compare the results of some of the performances of locomotives of various construction, and of stationary steam engines working ropes, and also the atmospheric system; to examine these results, and from them to determine the most economical and best manner of effecting the passage of mountain chains by railway lines.

A history of the construction of the Semmering and Giovi passes was first given, with the nature of the curves, gradients, &c. The locomotives of the Semmering and Giovi were then described. Some English steep inclines were then referred to, and the duties of the Semmering and Giovi engines were compared with the English engines for evaporating power, for horse power per cubic foot of water evaporated, and for weight drawn in proportion to the weight of locomotive.

After this the duty of the stationary engine on the Edinburgh and Glasgow line was analyzed, and the atmospheric incline on the St. Germain's Railway.

**THE SEMMERING RAILWAY.**—A description was given of some of the most remarkable viaducts and tunnels of the line.

1. The viaduct of Kalte Rinne, which was composed of two stages, with a gradient of 1 in 80, and a radius 10 chains 600 feet long, with an extreme height of 150 feet.

2. The Wagner Graben viaduct had a gradient of 1 in 47; its length was 470 feet, and the greatest height was 127 feet.

3. The Semmering tunnel was 72 chains long; its greatest depth was 374 feet, lined with masonry. The length from Payerbach to Morzzuschlag was 21.52 miles, thus composed:

|                                | Miles. | Gradient. |
|--------------------------------|--------|-----------|
| Payerbach to Eichberg.....     | 3.84   | of 1.46   |
| Eichberg to Klamm.....         | 2.53   | of 1.40   |
| Klamm to Breitenstein.....     | 3.26   | of 1.47   |
| Breitenstein to Semmering..... | 3.58   | of 1.54   |
| Semmering to Spital.....       | 4.44   | of 1.50   |
| Spital to Morzzuschlag.....    | 3.84   | of 1.50   |

The average gradient of Payerbach to the summit was 1.47 for 13.21 miles. The curvature was very great from Payerbach to Klamm; about 700 feet radius. The rails used weighed 88 lbs. to the yard. The engines employed had 75 square feet of fire-box surface; 189 tubes 2 inches diameter and 15 ft. 7 in. long—1585 square feet heating surface, and 12.6 square feet of grate surface.

The weight of the engine, filled and loaded, was 55½ tons—13½ tons on the leading wheels, 12½ tons on the middle, and 13 tons on the driving wheels. Toothed wheels were afterwards added, and thus all the weight was brought to bear for adhesion. The diameter of the cylinders was 18.7 inches, the stroke 25 inches, and the diameter of wheels 3 ft. 7¼ inches. Before the toothed wheels were added, to connect the tender to the locomotive, the duty of the engine required by government, was to draw 110 tons up 1 in 40, at ten miles an hour, consuming less than 144 cubic feet of dry wood per hour; to perform this, the load on the driving wheels must be at least eight times the tractive force available; or 8×11,040=88,320 lbs., nearly 40 tons on the driving wheels was required. The resistance of 11,040 lbs. was calculated from the gradient, 1 in 40, giving 56 lbs. per ton,

due to the gravity, and the remaining 13 lbs. was due to speed and traction on the level.

The performance of the engine before adding the toothed wheels was, on a gradient 1 in 40, dead weight=110 tons, engine and tender=55½ tons. The water evaporated per hour (stoppages not included)=255 cubic feet. The wood consumed to evaporate this=3820 lbs. The speed=11.4 miles per hour.

1°. This gave 4.15 lbs. of water evaporated per hour by each pound of wood, or 9.6 lbs. water evaporated per square foot of heating surface.

2°. As to the horse power usually represented by the evaporation of 1 cubic foot of water per hour, 165 tons (engine and tender included) at 11.4 miles per hour, drawn up 1 in 40, gave 347 h. p., and 255 cubic feet of water evaporated; consequently .73 cubic foot evaporated was equivalent to one horse-power.

The "Mammoth," Great Western Railway, =0.76 cubic foot per h. p., per hour.

The Goods engine, No. 227, North-Western Railway, =.675 cubic foot per h. p., per hour.

3°. The proportion that the dead weight bore to the weight of the engine and tender, gave the following results:

The Semmering engine, =4.2 h. p. per ton of engine and tender.

The "Mammoth," =3.2 h. p. per ton of engine and tender.

The North-Western, No. 227, =3.55 h. p. per ton of engine and tender.

These experiments were brought forward to show that no engine in England would alone work the Semmering traffic. When the hinder wheels were connected with the others in the Semmering locomotive, the performance rose to 220 tons up 1 in 40, at 9½ miles per hour, giving with the engine and tender included a duty of 380 horse-power; and 165 tons dead weight, carried up by 55½

tons of engine, gave—5.2 h. p. exerted  
55.25

per ton of engine and tender.

The mean pressure of steam was 80 lbs.

Lastly the economical effect stood thus:—44 lbs. of water were evaporated, and 11 lbs. wood were consumed per h. p. per hour, including the engine and tender. Without these:—14.6 lbs. of wood were consumed per horse-power per hour, giving 14.6 lbs. to raise 33,000×60 lbs., or 1 lb. of wood to raise 13,600 lbs. a foot high; or again, 82,208 lbs., irrespective of speed.

**THE GIOVI INCLINE.**—On the Giovi incline, passing the Apennines, near Genoa, on the Turin and Genoa Railway, the engineer who introduced the working of this line by locomotives, had to contend against a strong party who were in favor of stationary engines.

The Giovi incline commenced at 7¼ miles from Genoa, 295 feet over the sea, and ascended for 6 miles, to an elevation of 1184 feet. Average gradient 1 in 36; the length of tunnel=2.55 miles; the depth of shaft=600 feet; the cost per yard=£118.

Two engines of the same size (built by Messrs. R. Stephenson & Co.) coupled together and managed by one driver, were used to work the incline. Each carried its own coke and water. The diameter of the wheels=3 feet 6 inches. The cylinders=14 inches, with a stroke=22 inches. The locomotives were bolted together with the fire-boxes facing each other, and the driver stood on a common platform. Filled and loaded the two engines weighed 50 tons.



In fine weather the locomotives took up about 100 tons of load, and in the worst weather never less than 70 tons, at a speed of 15 miles per hour. The consumption of coke per ton per mile, amounted to, not including engine, 1.94 lbs.; including engine, 1.16 lbs. The consumption of coke to draw the engine from the bottom to the top, 6 miles, of 1 in 36, was 8.27 cwt.

1°. The water evaporated per pound of coke was 8.5 lbs.

2°. 150 tons drawn up 1 in 36, at 15 miles per hour, gave a result, with the engine, of 444 horse-power; and without the engine 295 horse-power.

3°. This gave 5.9 tons raised per ton of engine.

4°. 9.7 lbs coke raised 1,980,000 lbs.

Or 1 lb. coke, 204,000 lbs. 1 foot high.

Or, irrespective of speed, 169,600 lbs.

The Accrington Incline was 1 in 41.6 for two miles. 71.6 tons were raised at 6.31 miles per hour up the incline. The engine had cylinders 18 inches diameter, 24 inches stroke, 6 coupled wheels of 5 feet diameter.

The weight of the engine=26.25 tons; tender=16.75 tons; total=43.00 tons. The work done=74 horse power, which gave 1.7 horse-power, raised per ton of the engine and tender.

The Lickey Incline had a gradient of 1 in 37, worked by goods engines, with cylinders 16 inches diameter, and 24 inches stroke, and driving-wheels 5 feet diameter, and weighed 32 tons, with an assisting engine whose cylinders=16 inches, and stroke of 24 inches, and driving-wheels of 4 feet diameter, weighing 35 tons; together=67 tons. The results were that 240 tons were drawn up 1 in 37, at a speed of 6½ miles per hour, giving 293 horse-power, or 4.4 horse-power exerted per ton of motor.

THE EDINBURG AND GLASGOW INCLINE.—This incline was stated to be 1¼ miles long, with a gradient of 1 in 42. During a trial of twenty-three months, the miles run lifting trains were 21,250½, and the number of ascents=14,167.

The number of carriages drawn up=205, 181.

The average gross weight per train=86 tons.

The prime cost of the rope=£1094.

The coal consumed per mile to lift this weight of 86 tons=527 lbs.

Cost of coal per mile=11.195d.

The friction of the rope=1.20 of its weight.

The cost of working the line, including the rope,=50.299d.

The performance was 86 tons drawn up 1 in 42, at 30 miles per hour, giving 452 h. p. To this was to be added 211 h. p. to move the rope; and 35 lbs. of coal were expended per horse-power.

Secondly, without consideration of speed, 1 lb. of coal raised 45,700 lbs. 1 foot high.

The incline was worked by a wire rope of 4½ inches, and on several occasions there had been 30 loaded carriages on each train, and goods trains of 120 tons carried up without detention.

The total cost of working the incline for one year was £734 18s., against £3204 16s. for locomotives, giving a difference in favor of the stationary engine of £2460 18s. 9d.

[CONCLUDED NEXT WEEK.]

The Wisconsin Central Railroad is open to Geneva, in Walworth County.

## Miscellaneous and Mechanical.

### TESTING BUILDING MATERIALS

BY PROFESSOR HENRY.

The amount of water absorbed may be regarded as a measure of the antagonistic force to cohesion, which tends, in the expansion of freezing, to disintegrate the surface. In considering, however, the indication of this test, care must be taken to make the comparison between marbles of nearly the same texture, because a coarsely crystallized stone may apparently absorb a small quantity of water, while in reality the cement which unites the crystals of the same stone may absorb a much larger quantity. That this may be so was clearly established in the experiments with the coarsely crystallized marbles examined by the commission. When these were submitted to a liquid which slightly tinged the stone, the coloration was more intense around the margin of each crystal, indicating a greater amount of absorption in these portions of the surface.

The marble which was chosen for the Capitol is a dolomite, or is composed of carbonate of lime and magnesia in nearly atomic proportions. It was analyzed by Dr. Torrey of New York, and Dr. Genth of Philadelphia. According to the analysis of the former, it consists, in hundredth parts, of

|  |            |
|--|------------|
| Carbonate of lime.....                 | 54.621     |
| Carbonate of magnesia.....             | 43.932     |
| Carbonate of protoxyd of iron.....     | .365       |
| Carbonate of protoxyd of magnesia..... | (a trace.) |
| Mica.....                              | .472       |
| Water and loss.....                    | .610       |

The marble is obtained from a quarry in the southeasterly part of the town of Lee, in the State of Massachusetts, and belongs to the great deposit of primitive limestone which abounds in that part of the district. It is generally white, with occasional blue veins. The structure is fine-grained. Under the microscope it exhibits fine crystals of colorless mica, and occasionally also small particles of bisulphuret of iron. Its specific gravity is 2.8620; its weight 178.87 lbs. per cubic foot. It absorbs .103 parts of an ounce per cubic inch, and its porosity is great in proportion to its power of resistance to pressure. It sustains 23,917 lbs. to the square inch. It not only absorbs water by capillary attraction, but, in common with other marbles, suffers the diffusion of gases to take place through its substance. Dr. Torrey found that hydrogen and other gases, separated from each other by slices of the mineral, diffuse themselves with considerable rapidity through the partition.

This marble, soon after the workmen commenced placing it in the walls, exhibited a discoloration of a brownish hue, no trace of which appeared so long as the blocks remained exposed to the air in the stone-cutter's yard.—A variety of suggestions and experiments were made in regard to the cause of this remarkable phenomenon, and it was finally concluded that it was due to the previous absorption by the marble of water holding in solution a small portion of organic matter, together with the absorption of another portion of water from the mortar.

To illustrate the process, let us suppose a fine capillary tube, the lower end of it immersed in water, and of which the internal diameter is sufficiently small to allow the liquid to rise to the top, and be exposed to the atmosphere; evaporation will take place at the upper surface of the column, a new portion of water will be drawn in to supply the

loss; and if this process be continued, any material which may be dissolved in the water, or mechanically mixed with it, will be found deposited at the upper orifice of the tube, or at the point of evaporation.

If, however, the lower portion of the tube be not furnished with a supply of water, the evaporation at the top will not take place, and the deposition of foreign matter will not be exhibited, even though the tube itself may be filled with water impregnated with impurities. The pores of the stones so long as the blocks remain in the yard are in the condition of the tube not supplied at its lower end with water, and consequently no current takes place through them, and the amount of evaporation is comparatively small; but when the same blocks are placed in the walls of the building, the absorbed water from the mortar at the interior surface gives us the supply of the liquid necessary to carry the coloring material to the exterior surface, and deposit it at the outer orifices of the pores.

The cause of the phenomenon being known, a remedy was readily suggested, which consisted in covering the surface of the stone to be imbedded in mortar with a coating of asphaltum. This remedy has apparently proved successful. The discoloration is gradually disappearing, and in time will probably be entirely imperceptible.

This marble, with many other specimens, was submitted to the freezing process fifty times in succession. It generally remained in the freezing mixture for twenty-four hours but some times was frozen twice in the same day. The quantity of material lost was .00315 parts of an ounce. On these data Captain Meigs has founded an interesting calculation, which consists in determining the depth to which the exfoliation extended below the surface as the effect of its having been frozen fifty times. He found this to be very nearly the ten-thousandth part of an inch. Now, if we allow the alternations of freezing and thawing in a year on an average to be fifty times each, which in this latitude, would be a liberal one, it would require ten thousand years for the surface of the marble to be exfoliated to the depth of one inch. This fact may be interesting to the geologist as well as the builder.

Quite a number of different varieties of marble were experimented upon. A full statement of the result of each will be given in the reports of the committees.

At the meeting of the Association at Cleveland, I made a communication on the subject of *cohesion*. The paper, however, was presented at the last hour; the facts were not fully stated, and have never been published. I will, therefore, occupy your time in briefly presenting some of the facts I then intended to communicate, and which I have since verified by further experiments and observations.

In a series of experiments made some ten years ago, I showed that the attraction for each other of the particles of a substance in a liquid form was as great as that of the same substance in a solid form. Consequently, the distinction between liquidity and solidity does not consist in a difference in the attractive power occasioned directly by the repulsion of heat; but it depends upon the perfect mobility of the atoms, or a lateral cohesion. We may explain this by assuming an incipient crystallization of atoms into molecules, and consider the first effect of heat as that of breaking down these crystals, and permitting each atom to move freely around every other. When this crystalline arrangement



is perfect, and no lateral motion is allowed in the atoms, the body may be denominated perfectly rigid. We have approximately an example of this in cast-steel, in which no slipping takes place of the parts on each other, or no material elongation of the mass; and when a rupture is produced by a tensile force, a rod of this material is broken with a transverse fracture of the same size as that of the original section of the bar. In this case every atom is separated at once from the other, and the breaking weight may be considered as a measure of the attraction of cohesion of the atoms of the metal.

The effect, however, is quite different when we attempt to pull apart a rod of lead. The atoms or molecules slip upon each other. The rod is increased in length, and diminished in thickness, until a separation is produced. Instead of lead, we may use still softer materials, such as wax, putty, &c., until at length we arrive at a substance in a liquid form. This will stand at the extremity of the scale, and between extreme rigidity on the one hand, and extreme liquidity on the other, we may find a series of substances gradually shading from one extremity to the other.

According to the views I have presented, the difference in the tenacity in steel and lead does not consist in the attractive cohesion of the atoms, but in the capability of slipping upon each other. From this view, it follows that the form of the material ought to have some effect upon its tenacity, and also that the strength of the article should depend in some degree upon the process to which it had been subjected.

For example, I have found that softer substances, in which the outer atoms have freedom of motion, while the inner ones by the pressure of those exterior are more confined, break unequally; the inner fibres, if I may so call the rows of atoms, give way first, and entirely separate, while the exterior fibres show but little indications of a change of this kind.

If a cylindrical rod of lead three quarters of an inch in diameter be turned down on a lathe in one part to about half an inch, and then be gradually broken by a force exerted in the direction of its length, it will exhibit a cylindrical hollow along its axis of half an inch in length, and at least a tenth of an inch in diameter. With substances of greater rigidity this effect is less apparent, but it exists even in iron, and the interior fibres of a rod of this metal may be entirely separated, while the outer surface presents no appearance of change.

From this it would appear that metals should never be elongated by mere stretching, but in all cases by the process of wire-drawing, or rolling. A wire or bar must always be weakened by a force which permanently increases its length without at the same time compressing it.

Another effect of the lateral motion of the atoms of a soft heavy body, when acted upon by a percussive force with a hammer of small dimensions in comparison with the mass of metal,—for example, if a large shaft of iron be hammered with an ordinary sledge,—is a tendency to expand the surface so as to make it separate from the middle portions. The interior of the mass by its own inertia becomes as it were an anvil, between which and the hammer the exterior portions are stretched longitudinally and transversely. I here exhibit to the Association a piece of iron originally from a square bar four feet

long, which has been so hammered as to produce a perforation of the whole length entirely through the axis. The bar could be seen through, as if it were the tube of a telescope.

This fact appears to be of great importance in a practical point of view, and may be connected with many of the lamentable accidents which have occurred in the breaking of the axles of locomotive engines. These, in all cases, ought to be formed by *rolling* and not with the hammer.

The whole subject of the molecular constitution of matter offers a rich field for investigation, and isolated facts, which are familiar to almost every one when attentively studied, will be made to yield results alike interesting to abstract science and practical art.

#### IMPROVEMENTS IN LOCOMOTION.

At a meeting of the Institution of Civil Engineers, on May 20, a paper was read (in abstract) "On the Improvement of Locomotive Stock, and the Reduction of the working Expenses," by Daniel Kinnear Clark, Assoc. Inst. C. E. :—

It was stated, that the design of the paper was to discuss the locomotive engine physiologically; to consider some departments of practice which appeared to be in a transition state; to endeavour to indicate how far, in some respects, the locomotive, even in its present advanced state of existence, was susceptible of improvement, and to form some estimate of the pecuniary advantages thus derivable. The three elements of the locomotive—the boiler, the engine, and the carriage—were considered successively.

With respect to the boiler, the fuels in use in this country were stated to be coke and coal. The author had, in a previous paper shown, by mechanical analysis, that the combustion of coke in the locomotive was practically complete; and he adduced, in corroboration, the results of a subsequent chemical analysis of the gases of combustion, by M. Ebelmen, in the engines of the Paris and Lyons. In the combustion of coal, which consisted chiefly of carbon and hydrogen, the production of smoke was ascribed to the presence of the hydrogen, which had a stronger affinity for oxygen than carbon had, and thus precipitated the carbon particles raised in union with it in the form of smoke; and it was maintained that to effect the consumption or prevention of smoke, two conditions of supply must be observed—a sufficiency of oxygen, and a sufficiently high temperature. For these conditions, it was argued that, in locomotive practice, strength of draught, and a means of equalising the temperature, were necessary to neutralise the evil of intermittent firing, and the unavoidable fluctuations of temperature.

The author adduced, in evidence, the results of trials made by him in 1850-1 and by Messrs. Woods and Marshall in 1854, which showed that in the prevailing type of boilers, the evaporative powers of good coal and good coke were as two to three; coal doing mechanically just two-thirds of the duty of coke. He proceeded to give an account of recent trials made by him in the beginning of this year with the "Canute," on the London and South-Western, one of Beattie's passenger-locomotives, planned expressly for the combustion of coal, and the heating of the feed-water. A pile of fire-bricks, through which the products of combustion must pass, was deposited in a combustion-chamber joining the fire-box and the tubes, to act as an equaliser of temperature. The

hind compartment of the fire-box, also was arched over with fire-bricks. The heating apparatus was in two parts—the condenser outside, which acted by throwing the feed-water in jets amongst the exhaust steam, and the superheater inside the smoke-box, through which the feed-water was also passed just before entering the boiler. The cylinders were 15 inches diameter, with length of stroke of 21 inches; driving wheels  $6\frac{1}{2}$  feet; fire-grate area 16 square feet; heating surface 769 square feet; and the weight of bricks was  $5\frac{1}{2}$  cwt. It was found that in the "Canute" the prevention of smoke was completely attained, with ordinary care and attention; that the evaporative power of the coal was materially improved; and that the heating apparatus was decidedly beneficial. With the regular express trains the following results were obtained :—average express train, of  $10\frac{1}{2}$  carriages, estimated at 66 tons weight; average speed, excluding stoppages, 34 miles per hour; water evaporated on duty, 82 cubic feet per hour of the time the steam was on the piston; corresponding consumption of coal 547 lbs. per hour, and 15 lbs. per train mile; water evaporated per pound of coal, 9.35 lbs.; average temperature of feed-water, 187 deg. Fahr. Special train of 28 carriages, weighing 203 tons; average speed  $30\frac{3}{4}$  miles per hour; water evaporated as before, 130 cubic feet per hour; coal per hour 915 lbs., and per train mile  $28\frac{1}{2}$  lbs.; temperature of feed-water, 212 deg. Fahr. It was argued that, on Beattie's system, an economy of thirty-six per cent. of coal was effected in comparison with ordinary engines burning coal; and that this system was on a footing of equality with coke-burning engines, in evaporative efficiency of fuel, weight for weight.

The water supplied to locomotive boilers was stated to be generally impure, mechanically or chemically, and to affect very injuriously the durability of the engine, reducing, in one case, the durability of the tubes from eight or nine years with soft water, to three years with hard water. The loss by priming with bad water was shown to be considerable. It was concluded that the water supplied to locomotives should be previously purified, chemically and mechanically, in large tanks or reservoirs.

With respect to the engine proper, the author maintained, that the link-motion was a sufficient and satisfactory expansion-gear; that its merits were not appreciated; and that, in the ordinary practice of expansive working in locomotives, the steam was not cut off earlier than at forty-five per cent. of the stroke; but that, with proper arrangements it might be cut off at one-fifth. He argued also that the steam should be superheated, and the cylinders perfectly protected; and that the slide-valves should be balanced.

With respect to the carriage, a resume of the early and current practice of engine-builders was given, from which it appeared that the system of six wheels, with central drivers, was the prevailing practice. It was argued, that this system was best adapted to secure the main objects in the carriage, a sufficiency of driving weight, and free and steady running at high speeds, with the important proviso, that the revolving and reciprocating masses of the pistons and cranks, and their connections, should be balanced in the wheels. Evidence was adduced in proof of the economy of fuel effected by a correct equilibration of the engine.

In conclusion, an estimate was formed of the economy of working expenses due to the



improvements described, on the assumptions first, that the consumption of fuel was an index to the working charges generally of the locomotive stock; second, that the average costs per ton of coal and coke for locomotive purposes were as two to three generally; and third, that the feed-water supplied to boilers was generally impure.

The following is an abstract of the successive items of economy of working charges, separately estimated:

|   |              |
|---|--------------|
| By the successful substitution of coal for coke.....          | 33 per cent. |
| By efficiently heating the feed-water.....                    | 15 "         |
| By the use of pure feed-water.....                            | 10 "         |
| By protecting the cylinders, and super-heating the steam..... | 10 "         |
| By increased expansive working.....                           | 25 "         |
| By the correct equilibrium of the engine                      | 10 "         |

The gross resulting economy would then be represented, not, of course, by the direct sum of these percentages, but by the result of the successive reductions obtainable by their successive application. Thus, after making the first deduction of thirty-three per cent., there would remain a balance of sixty-seven per cent. to be operated upon for the second deduction, which was fifteen per cent.; but fifteen per cent. of sixty-seven was equivalent to ten per cent. of the original quantity, and would leave 67—10—57 per cent.; the third deduction to be made was 10 per cent. of 57 or 5.7 per cent. of the original, leaving 51.3 per cent., as the balance to be operated upon for the next deduction. Continuing the operation in this manner, the gross resulting economy would amount to about seventy per cent. of the existing average working charges. Allowing for contingencies in the estimate, fifty per cent. was adopted by the author, as the probable average saving that might be effected in the consumption of fuel, and generally in the working charges of the locomotive stock of the railways of the United Kingdom.

The average apportionment of the receipts on the railways of this country was stated to be as follows, on the authority of Mr. Chattaway:—

|  |               |
|--|---------------|
| Working charges.....                         | 46½ per cent. |
| Interest on guaranteed capital.....          | 25½ "         |
| Dividends in respect of ordinary shares..... | 25 "          |
| Gross receipts.....                          | 100           |

Also, that the average cost of locomotive power was 29.3 per cent. of the receipts; consequently, the saving, estimated by the author, would be one-half of this, or fifteen per cent. of the receipts, and would raise the available dividends from twenty-five to forty per cent. of the receipts; or from the average on ordinary share capital, stated by Mr. Chattaway as 3.14 per cent., to a dividend of five per cent. per annum.

[It was announced that as it had been necessary to read the paper only in abstract, it would within a short period be printed *in extenso*, in order that copies might be transmitted to such members as would apply to the secretary for them, and that the discussion upon the subject would take place on Tuesday, 11th November, 1856, the first meeting of the Institution after the recess.]

THE CHICAGO AND MILWAUKEE, AND THE WISCONSIN LAKE SHORE RAILROAD.—The Wisconsin Lake Shore Road will make its first dividend since its completion, last season, on the 1st of July; 4 per cent. in cash. The passenger traffic is already immense, and cheaply operated, over the 86 miles, of which the Wisconsin Lake Shore Company own 40 miles, costing \$1,600,000, of which \$1,000,000 is in shares; \$400,000 in bonds, and \$200,000 in loan from the city of Milwaukee.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 30 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.  
All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, TUESDAY, JULY 29, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, JULY 29.

### RAILROAD TO THE PACIFIC.

We hear of a bill about to be introduced by the Committee on the Pacific Railroad, into the House of Representatives. If anything is ever to be done, we should think it was time. Congress, we believe, is to adjourn on the 18th of August; and unless this bill is pushed right through, it cannot pass at all.

The provisions of the bill are likely, we believe, to prove satisfactory, though it is exceedingly partial to the northern routes. If we understand it, this plan provides for *three* routes: one somewhere above the 44th degree of latitude; another between the 38th degree and the 44th; and another on or near the 32d degree—that is south of the 38th. It is said the two former routes are to have thirty sections per mile, from the borders of the States to the Pacific. The southern route is to have 40 sections per mile thro' the Gadsden purchase, 10 sections per mile thro' California—one branch leading to San Diego, and the other to San Francisco. It seems that the generous grant of Texas for the road, through her territory, has prevented the Texas company from receiving anything directly, although the grant to the residue of the line, from Texas to the Pacific, is perhaps sufficiently liberal to induce and insure the construction of the road on that route.

We are told that the southern road is to be made by a company, formed of the Atlantic and Pacific Company, the Western Texas Company, and the Shreveport and Vicksburg Company—the former to construct from Texas to the Pacific—the latter through Louisiana, and the Texas Western through Texas. The President of the joint company, we are told, is to be the Hon. THOMAS BUTLER KING, a gentleman in every way competent, and likely if any man can, to carry through the enterprise.

We have given the plan as it is reported to be agreed upon by the Committee. There are other arrangements, in regard to mail carriage and transportation, which are said to be liberal.

We have no doubt that in the course of time a Pacific Railroad will be made under such an act as this. At the same time, it will

require a good deal of time to arrange companies and acquire capital for such a purpose. We trust that Texas will see the propriety of passing the Loan Bill—in which case the Texas Western Company will be able to proceed with vigor. If Congress, however, intends that anything shall be done under this proposition, it should be done quickly. The time has come when it is imperatively necessary to have a highway to the Pacific. The importance of it is beyond computation. At this time we find an Indian War in Oregon and a Revolution in California, without any direct means of sending aid. When aid is sent it costs at least ten-fold what it would to send it by railroad direct. The extra expense of the two thousand men the government has in California, Utah and Oregon, cannot be less than *two millions per annum*, an interest on thirty millions of dollars! The expense of the mails is equally enhanced; and that of the people of the Pacific as much so. Not only this, but no route by Panama, or Nicaragua, or Tehuantepec is a substitute for the direct overland route, in inducing an increase of the Pacific trade. The whole commerce of America with Asia must sooner or later be done through and on our own Pacific coast. The idea of sending vessels round Cape Horn at this period of the world is ridiculous. 2,500 miles from a city on the Mississippi to one on the Pacific, can be done in *six days, for fifty dollars* a passenger. In the presence of such time and such economy, all other modes of transit fade away. No man will pretend to go in any other way. The commerce of the Pacific *must* go over the continent.

Hence, we say, what Congress intends to do, they should do "quickly." Time is speeding its course, and for this generation will soon be gone. Let Congress *act* then. Even if they will do nothing, in face of all public opinion, let them *say* that, and the people will attend to it. Let Congress do SOMETHING.

### BUFFALO & NEW YORK CITY RAILROAD.

—At a meeting of stockholders of the Buffalo & New York City Railroad, held in Warsaw a few days ago, the following named gentlemen were elected Directors: James Moore, John Wilkeson, Aaron Rumsey, Asa D. Wood, Augustus Frank, Samuel Swain, R. H. Heywood, George R. Babcock, H. S. Cutting, John A. McElwain, John B. Halstead, Horace Hunt, Samuel Hallet.

At a meeting of the Board of Directors, subsequently held, the following officers were duly elected: James Moore, Esq., President; Augustus Frank, Vice President; Geo. Colt, Jr., Secretary and Treasurer; Chauncey Tucker, Esq., Attorney.

### THE FARMS AND FARMING OF OHIO.

Ohio is, in fact, the first agricultural State of the American Union, and as such occupies a position of great interest and importance. For this reason we have occasionally, in connection with railroad subjects, considered the products of agriculture, as a basis of commerce and transportation. It is our purpose now to give a general view of the farms and farming of this State. In reference to the annual crops, in the quantities of land, fences, and persons given below, we shall make allowance for the six years growth from 1850 to 1856.

#### 1. OF THE NUMBER AND QUANTITY OF FARMS.

The number of acres of land in Ohio, and their distribution into cultivated and uncultivated, is as follows:

|   |            |
|---|------------|
| Acres of surface returned by the Auditor..... | 24,863,703 |
| Acres of improved land.....                   | 11,429,250 |
| Acres of unimproved land.....                 | 9,357,000  |
| Total of occupied farming land.....           | 20,786,250 |
| Number of farms.....                          | 165,077    |
| Average acres in a farm.....                  | 125        |

The actual size of farms is exceedingly various. In some parts of the State—especially on the Scioto and its tributaries, within the Virginia Military District—farms are often of very large size—from 500 to 2,000 acres each; but, in the Miami country, and in the Western Reserve, farms are quite small. In two-thirds of the State the farms will average hardly 100 acres. We have in sight of us at this moment eight farms, whose aggregate is 655 acres, making an average of 82 acres. On these, nearly 200 acres are unimproved. There is ample room to produce four-fold the annual crops in Ohio, which are at present produced.

#### 2. OF THE VALUE OF FARMS.

The entire assessed value of property in Ohio is *eight hundred and sixty millions of dollars*. Of this, about three-fourths is in real estate; and of this again, about three-fourths in farms and lands. As only one-fifth of the State is yet unoccupied as farms, and that cannot be set down at more than half price, we can only deduct one-tenth of the value of lands on that account. We have, then, this result:

|                             |               |
|-----------------------------|---------------|
| Value of farms.....         | \$435,375,000 |
| Number of farms.....        | 165,077       |
| Average value.....          | \$2,637 00    |
| Average value per acre..... | 21 10         |

The valuation of land is of course different in different counties—varying chiefly on account of their vicinity to market, and their facilities of transportation. Farms near Cincinnati are worth more than any other.—Farms on a railroad are worth more than those off. Farms near a station, where produce



can be shipped, are worth more than those more remote.

The following are the average valuations of farm lands in several counties:

|                                   |         |
|-----------------------------------|---------|
| Hamilton county (Cincinnati)..... | \$50 00 |
| Warren.....                       | 25 00   |
| Ross (Chillicothe).....           | 16 00   |
| Muskingum (Zanesville).....       | 15 00   |
| Montgomery (Dayton).....          | 25 00   |
| Merger, do.....                   | 4 00    |
| Washington (Marietta).....        | 6 00    |
| Morgan.....                       | 10 00   |
| Cuyahoga.....                     | 17 00   |
| Huron.....                        | 13 00   |
| Geauga.....                       | 10 00   |
| Ashtabula.....                    | 9 00    |
| Pickaway.....                     | 19 00   |
| Franklin (Columbus).....          | 18 00   |

It will be seen that the Miami country is much the most valuable; next the Scioto Valley; next the Western Reserve; and last the Muskingum. As farming lands, these ratios of value are very nearly correct; but had the coal and iron been estimated properly, the valuation of the Muskingum country would have been much higher.

The valuation of these sections taken collectively—that is of farming lands exclusively—were:

|                       |         |
|-----------------------|---------|
| Miami Valley.....     | \$24 00 |
| Scioto Valley.....    | 15 50   |
| Western Reserve.....  | 14 00   |
| Muskingum Valley..... | 13 00   |

### 3. OF THE PRODUCE OF FARMS.

Taking the average crops of Ohio for several years, and looking to the peculiar characteristics of last year, we should estimate the crops of last year as follows:

|                        |            |
|------------------------|------------|
| Wheat.....bushels      | 20,000,000 |
| Corn.....do            | 80,000,000 |
| Oats.....do            | 15,000,000 |
| Rye.....do             | 500,000    |
| Barley.....do          | 400,000    |
| Buckwheat.....do       | 700,000    |
| Potatoes.....do        | 5,000,000  |
| Hay.....tons           | 1,600,000  |
| Grass Seed.....bushels | 150,000    |
| Flax Seed.....do       | 200,000    |
| Bees Wax.....lbs.      | 1,000,000  |
| Butter.....do          | 35,000,000 |
| Cheese.....do          | 25,000,000 |
| Wool.....do            | 12,000,000 |

The value of these may be ascertained by taking the average value at the nearest market town. Wheat last year may be taken at \$1 30 per bushel; corn at 35c; oats 30c; rye \$1; barley 80c; buckwheat \$2 per bushel; potatoes 50c; hay \$7; grass seed \$6; flax seed \$3; bees wax 25c; butter 15c; cheese 7c; and wool 40c. The value of the farm produce in Ohio, then, without looking to the manufactured articles, such as beef, pork, lard, whisky, &c., may be estimated thus:

|  |              |
|--|--------------|
| Wheat crop.....  | \$26,000,000 |
| Corn crop.....   | 28,000,000   |
| Oats.....  | 4,500,000    |
| Rye.....   | 500,000      |
| Barley.....  | 320,000      |
| Buckwheat.....   | 1,400,000    |
| Potatoes.....  | 2,500,000    |
| Hay.....   | 11,400,000   |
| Grass Seed.....  | 900,000      |
| Flax Seed.....   | 600,000      |
| Bees Wax.....  | 250,000      |
| Butter.....  | 5,250,000    |
| Cheese.....  | 1,750,000    |
| Wool.....  | 4,800,000    |
| Value of pasturage for 2,000,000 of Cattle and Horses..... | 6,000,000    |
| Value of Orchard & Garden Products.....                    | 1,200,000    |
| Value of Wine—400,000 gallons.....                         | 300,000      |

Value of Produce.....\$95,670,000

|                             |               |
|-----------------------------|---------------|
| Aggregate Farm Capital..... | \$435,375,000 |
| Gross proceeds.....         | 95,670,000    |
| Gross per cent.....         | 22 per cent.  |

To ascertain the *net proceeds of capital* thus invested in actual farming, we will suppose

the 165,000 farmers to receive \$1 per day each for their labor, and allow \$3,000,000 per annum for seed. Then we have this account:

|                     |              |
|---------------------|--------------|
| Labor.....          | \$50,645,000 |
| Seeds.....          | 3,000,000    |
|                     | \$53,645,000 |
| Gross proceeds..... | 95,670,000   |
| Net profits.....    | \$42,025,000 |

The profit on the capital invested in farming in Ohio must, therefore, be about 10 per cent. There are various modes of testing this; but we know of none which will not produce the same result. A man and his family live well on 60 acres of land; for which he asks \$3,000. Now, allow him his dollar a day, and his wife half that, which is \$470; add to that 10 per cent. for his capital (\$3,000), and it makes \$770. Now, is there any possible doubt that the house rent, clothing, living, &c., of that family are worth at least that sum? There is no doubt it is worth more. This man cultivates his farm without hard labor. The example we have given is a very common one. It is the case of thousands, and we give it to show what we have proved in another mode—that farming in Ohio is a profitable business. It is quite as much so as any other kind of business whatever.

But what has made farming in Ohio so profitable? The immediate cause is the advanced price of products; but what has caused this advanced price? Nothing but *the increased facilities of transportation*. Take an example of the operation of this, in a case which is striking and conclusive. In 1820, when surloin beef was 12 cents per pound in New York, it was but 3 cents in Cincinnati—making 9 cents difference. Now, when it is 15 cents in New York it is 12 in Cincinnati (we speak of the best cuts); or 3 cents difference. The 6 cents which has thus been advanced in the Cincinnati market, beyond the former difference, has gone to the Ohio producers. Corn has risen from 12 to 35 cents; wheat from 60 cents to \$1 10, and all other things in proportion, because canals and railroads have brought the New York market so much nearer and cheaper.

The relative value of land, and the results of high cultivation, we shall discuss hereafter. The difference between new and old lands, and the relative produce of manured and unmanured land, are matters now of great interest in this State.

### PALMER'S MARINE PUMP.

We witnessed yesterday the performance of this pump at our levee, and were much pleased with it. This pump is a rotary one, and is constructed on new and scientific principles. The pump itself is thirty-four inches in diameter and about ten inches deep. In this revolve arms twenty-eight inches in diameter, and curving in both the vertical and horizontal sections. The pump receives the water through a suction-pipe eighteen inches

in diameter. This pipe terminates at its upper end in a bell-shaped enlargement, in which is placed a set of spiral arms curving in a reverse direction to the arms of the pump. The exit-pipe is eighteen inches in diameter, and is made of gutta percha.

At the trial yesterday the pump was placed on the wharf-boat with the suction in the water and the exit raised on a scaffold about six or seven feet above the water. The pump was driven by a steam-engine with cylinder eight inches in diameter and twelve inches stroke running at the rate of 150 per minute, and it was so geared that the pump ran at the same rate. The water was discharged at the exit-pipe in a constant stream *eighteen inches in diameter and very rapid*. It is calculated from the performances of the pump on wrecks that it discharges 20,000 gallons of water per minute. There are no valves in this pump, and therefore it does not choke. It will raise water twenty-eight feet, and force it any height, according to the strength of the apparatus and the power used.

The value of this pump for raising sunken vessels can be judged by the following description of its performances when used for this purpose:

The propeller Cincinnati stranded on the Rocks last fall in the neighborhood of Goodridge on Lake Huron; her planks were cut through in many places as she went down, and the water poured in rapidly as pumped out; all efforts to raise her proving unavailing until her owners obtained a single Palmer's Pump with only a sixteen inch discharge. The propeller was raised in 40 minutes after the (Palmer's Marine) Pump was set in motion. During the 40 minutes this celebrated Pump was in motion on the propeller, it threw out 5,000 bushels of wheat, which was pumped through the Pump with the water. The steamer Niagara was also raised in 21 minutes by the use of this Pump, discharging 12 tons of coffee, chips, sand, &c., with the water. The propeller Saganaw was raised by this Pump in 24 minutes. But the greatest feat of all was the raising of the propeller Napoleon, with a valuable cargo of copper ore, &c., sunk last spring in Sault St. Marie river. She was pumped out in 9½ minutes, as timed by the editor of the Lake Superior Journal, who was on the spot. And who does not remember the peerless steamer May Flower?—so long the pride of the Lakes—how she sunk, and had been given up by the owners long, long ago, as lost? But Palmer's Marine Pump was set in operation on board this vessel, and notwithstanding the openings in her bottom, was set afloat in 51 minutes and taken to Buffalo in good order.

No vessel should be passed by the inspector, as fit for service, unless provided with a pump of sufficient capacity to be useful in keeping it afloat in case of accident. Had the ill-fated Arctic been provided with a pump of this description, she would not, in all probability have sunk.

We understand that Messrs. Ferris & Millard, who own the right for the Mississippi Valley, have made an arrangement for the



manufacture of the pumps, with Messrs. Hall, Dodds & Co., of this city, well known for their excellent safes. This fact is a sufficient guaranty that they will be well constructed.

#### LEHIGH VALLEY RAILROAD.

This company is now in market with \$400,000 of its First Mortgage Bonds, which it offers for sale at 75 per cent. They are due in 1873, and bear 6 per cent. interest. The purchaser who pays 75 per cent. for them will receive 8 per cent. as a permanent investment, and in 1873 will get 100 cents on the 75, or 25 per cent. advance. This will make it nearly a 10 per cent. investment. Now this is one of the things that make capitalists suspicious of railroad investments. If a railroad can offer security at all, they should negotiate their securities at par. There is abundant means constantly seeking safe investment at moderate rates. But, to obtain it, the investment must be proved to be safe. And it is quite evident that, if it is not safe for 100 cents on 100 cents, it is not altogether so for 100 cents on 75. If the road is not security for the repayment of the actual loan which is *all* invested in it, there is but a poor chance for the payment of that loan and a heavy shave above it. We do not make these remarks to disparage this road. We have not their reports, and therefore do not refer to their present condition. But we do believe that it will be vastly for the interest of railroads to take the stand that their securities are as good as the market affords, and that they will not sacrifice them—that they will realize *par* for them, as they expect to redeem them at *par*. When this is done it is true fewer roads will be built, but those that are built will be built more economically and safely for the stockholders.

[From the Texas State Gazette, July 5.]

#### THE CONDITION OF TEXAS.

In our last we laid before our readers a sketch of the sugar region of Texas. We estimated its extent at 7,529,400 square acres; or about *one-twenty-fifth* part of the whole State. This is but an insignificant field to Texians, who are accustomed to the wide range of so large a State. It is, however, a field of land larger than the whole State of Maryland, or the three States of Delaware, Connecticut and Rhode Island united. It is larger than the whole island of Jamaica, which has produced an annual product of 143,000 hhds. per year, and exceeding 18,000,000 lbs. coffee, with large amounts of pimento, arrow root, ginger, indigo, &c. In fact the sugar field of Texas has more land actually capable of cultivation than the whole of the British West Indies.

It was, doubtless, our proximity to the West Indies, and our finer cotton, as well as fair sugar field, which induced England to make liberal overtures to us while the question of annexation to the United States was pending in Congress.

We intend, in the present number, to examine the cotton field of Texas. It is indeed a gigantic one, far surpassing the known

limits of any of our sister cotton-producing States.

The area of the cotton field of Texas is dependent upon the superior elevation of the State, as well as its extent. For illustration, Austin is in the latitude of Bayou Sara. The latter place lies in a parish producing two-thirds as much sugar as the whole product of Texas. The former (Austin) is in Travis county of this State, and is upwards of eighty miles from our sugar region. This is owing to the difference in the face of the earth. The altitude of Bayou Sara above the Gulf is about 120 feet, while the altitude of Austin is nearly 600 feet.

This will be more clearly seen by the following table of altitudes, carefully compiled by Commissioner Crosby, of the Land Office:

#### ELEVATIONS ABOVE THE LEVEL OF THE OCEAN, IN FEET.

|   |                   |
|---|-------------------|
| Trespalacios—corner of the stone warehouse.....         | 6 3/4             |
| Lavaca.....   | 24                |
| Guadalupe, at the mouth of Sandies.....                 | 50                |
| Cibolo.....   | 250               |
| San Antonio.....  | 635               |
| Castroville.....  | 767               |
| Fort Inge.....  | 845               |
| Leona Mountain, near Fort Inge.....                     | 930               |
| Rio San Pedro, first crossing.....                      | 859               |
| do do do.....   | 1827              |
| Table lands of Texas.....                               | 2691              |
| Howard's Spring.....                                    | 3075              |
| High table lands beyond.....                            | 3008              |
| Live Oak Creek.....                                     | 2338              |
| Rio Pecos Valley.....                                   | from 2330 to 2618 |
| Rio Escondido, first crossing.....                      | 2660              |
| Leon Spring.....  | 4240              |
| Limpia, first crossing.....                             | 3930              |
| Painted Camp.....                                       | 5020              |
| Highest point of the road to El Paso.....               | 5765              |
| Providence Creek.....                                   | 5492              |
| Eagle Spring.....                                       | 4542              |
| First point on the Rio Grande.....                      | 3700              |
| El Paso.....  | 3750              |
| Mouth of the Little Wichita.....                        | 750               |
| do Big do.....  | 900               |
| Junction of the South and North Forks of Red River..... | 1100              |
| Head of the main, or South Fork of Red River.....       | 2450              |
| Llano Estacado (Staked Plain).....                      | from 2300 to 2500 |

The cotton field of Texas, therefore, extends naturally much farther south than the Mississippi valley. It extends over the whole State, west of the Guadalupe, from as low 29° north latitude, and varying from that line on the south to about 30° north latitude, on the Sabine, according to the depression of the surface. In the valleys of every river it is cultivated to some extent—even on the Rio Grande; but on this stream, and on the Nueces, the experiments have as yet been limited. North and west of San Antonio is a large field of country, which future years will doubtless find cultivated by the cotton planter. As far, however, as experiments have been made in the valley of San Antonio, the Cibolo, the Guadalupe, and the Colorado, they have proved eminently successful. This whole country is a fine cotton-growing region, and demands only the aid of railroads to develop its resources.

On the other hand, the Brazos, the Trinity, the Neches, the Sabine, and Red River, to near their sources, afford immense fields for the cotton planter, and are gradually filling up with that class. Settlers in Texas are necessarily compelled to establish themselves near where they can have facilities for transportation to market; and whoever has traveled over our valleys will be struck with the fact that immense bodies of land, of a fertility undoubted, have not yet, nor will be settled for years to come, unless some artificial means of communication, such as railroads, can be constructed. Fine cotton lands are found in our prairies, far distant from rivers, and these, as in Illinois, will be cultivated as far as twenty and thirty miles from timber, when the facilities of railroads shall be obtained.

On the San Saba, the Llano, and Pecan Bayou, the time will come when we shall find a large amount of cotton produced. At present we cannot expect, nor but for railroad communication could we ever hope for it.

In 1850 the principal cotton-producing counties were Colorado, Washington, Brazoria and Austin, in the west, and Harrison and Rusk, in the east. Such, however, have been the changes in the amount produced, by the great increase of immigration, that a much different state of things at present exists. We find in the census the number of slaves and amount of cotton in each county of our State. Taking this and the number of slaves for 1855, reported by the Comptroller, as our data, we are able to make the following estimate of cotton produced in the past year. There are, no doubt, some errors in the census, and the amount of bales is much under the actual facts.

#### COTTON PRODUCED.

|           | Slaves. | Produce. |
|-----------|---------|----------|
| 1850..... | 58,161  | 58,072   |
| 1855..... | 105,974 | 105,111  |

In 1850 we had 58,161 slaves, and produced 58,072 bales of cotton. In 1855 our number of slaves had increased to 105,974, and in the same ratio we might estimate our present product as a total of say 105,111 bales. This, we are afraid, does not net more than \$25 per bale of 400 lbs. With proper facilities, it ought to net \$30. At \$25 the annual product might be put at \$2,627,775, and our annual loss upon this crop, for want of railroad facilities, at \$525,555, which sum, if annually put out at interest, would in a few years itself build a railroad from the northern extremity of the State to the Gulf.

We now stand next to Louisiana in the product of cotton for 1850. In that year the comparative crops of cotton were as follows:

| States.             | Cotton bales.<br>400 lbs each. |
|---------------------|--------------------------------|
| Alabama.....        | 564,629                        |
| Arkansas.....       | 65,344                         |
| Florida.....        | 45,131                         |
| Georgia.....        | 499,091                        |
| Indiana.....        | 14                             |
| Kentucky.....       | 758                            |
| Louisiana.....      | 178,737                        |
| Mississippi.....    | 484,292                        |
| North Carolina..... | 50,545                         |
| South Carolina..... | 300,901                        |
| Tennessee.....      | 194,532                        |
| Texas.....          | 58,072                         |
| Now 105,111         |                                |
| Virginia.....       | 3,947                          |
| Sum total.....      | 2,445,593                      |

Since the taking of the census there have been considerable additions of cotton lands in Alabama, Louisiana, Mississippi, South Carolina and Tennessee, consequent upon the completion and projection of railroads, and the appropriation by the Federal Government to some of the States, of lands for railroad and other purposes. Many thousands of acres of land are now being put into cultivation in those States, which had been passed over, first on account of their apparent poorness of soil or overflow, and second their remoteness from market. In Mississippi and Louisiana there have been also large amounts of land reclaimed from inundation by the building of levees and drainage; and nearly all of those lands, when cultivated, are appropriated to cotton plantations.

In view of these facts, the next census will show a heavy increase of bales in our sister States.

But, while for some years these States may continue to produce more cotton than Texas, it is in the nature of things impossible for any one State of the South to maintain long its



ascendancy over us. This will be at once self-evident, when we come to survey our cotton-producing area.

Andrews, in his report on the colonial and lake trade, published in 1853, by order of the United States Senate, estimated the area of Texas susceptible of cultivation in cotton at ten millions of acres, requiring 1,200,000 hands to cultivate it, and producing five millions of bales of cotton. He estimates the annual product of Texas at 2,000,000 bales beyond all other States.

| STATES.             | Area susceptible of cultivation in cotton. | No. of hands necessary therefor. | Probable product in bales of 400 lbs. |
|---------------------|--|----------------------------------|---------------------------------------|
| Florida.....        | 6,000,000                                  | 750,000                          | 3,000,000                             |
| Texas.....          | 10,000,000                                 | 1,250,000                        | 5,000,000                             |
| Arkansas.....       | 3,000,000                                  | 375,000                          | 1,500,000                             |
| Louisiana.....      | 3,000,000                                  | 375,000                          | 1,500,000                             |
| Tennessee.....      | 2,000,000                                  | 250,000                          | 1,000,000                             |
| South Carolina..... | 200,000                                    | 25,000                           | 100,000                               |
| Mississippi.....    | 6,000,000                                  | 750,000                          | 3,000,000                             |
| Georgia.....        | 3,000,000                                  | 375,000                          | 1,500,000                             |
| Alabama.....        | 6,000,000                                  | 750,000                          | 3,000,000                             |
| Total.....          | 39,200,000                                 | 4,900,000                        | 19,600,000                            |

But Mr. Andrews has fallen into many errors, and the above is one of them, so far as it relates to Texas. Our cotton area may be put down at one-third of the whole State, or 53,520,520 acres. Those who know the character of our country, its level plains, and the several degrees of latitude in which cotton may be cultivated, will regard this estimate as a low one. Now we will take, say only one-third of this area, as capable of being exclusively appropriated to cotton. This would be 19,506,840 acres, which, at the low average of say 700 lbs. seed cotton to the acre, would make a total of 13,654,788,000 lbs seed cotton, or 9,032,705 bales of ginned cotton, at 1400 lbs seed cotton to the bale. A bale to the acre is a very frequent average in Texas.

From a paper transmitted to the House of Representatives on the 10th inst., by the Secretary of State, we estimate the average number of bales (400 pounds per bale) imported into Great Britain from all countries, at 2,095,839 bales; to France do. 65,913 bales; to Spain 84,260 bales; to all other countries, from the United States, 264,532 bales. The total is 2,510,544 bales. This amount includes nearly all the cotton now shipped abroad from the place where it is raised, and from which it appears that it is but about one-fourth of the amount of bales which the State of Texas itself is capable of producing, at the lowest basis of calculation.

A State with resources so formidable must command capital and population in a rapid ratio, with her scale of internal improvements. It is also inevitable that with a proper direction to our railroads, an element of capital like this will build up a cotton market in our own State. It is a matter of time; the causes already exist.

It is estimated by Mr. J. N. Cardoza, of Charleston, in a very able commercial paper, and which we have read with great pleasure, that from 1855 to 1865 there will be an average annual deficit in our product of cotton, amounting to 476,500 bales. This is nearly as much as the whole cotton crop of the State of Mississippi in 1850. The truth of this calculation, therefore, involves the settlement of the cotton lands of Texas to a great extent, seeing that we have so large a field yet entirely unoccupied. Our crop, say of 116,000 bales, at the highest average of acres to produce it, would not occupy an area of more than 232,000 acres, leaving cotton land to cultivate to the amount of 16,836,485 acres.

As to the fairness of Mr. Cardoza's calculation, his premises are doubtless correct.—From 1845 to 1855 cotton increased in production 9 $\frac{3}{4}$  per cent. per annum, while consumption increased at 16 $\frac{3}{4}$  per cent. At a mere continuance of the same rate, his prediction must be realized. But, in the present attitude of affairs we go further. The election of Mr. Buchanan involves the acquisition of Cuba, while the revolution in Central America cannot stop in Nicaragua; it must sweep the whole country. Again, Russia is rapidly becoming an American buyer, and she has tens of millions who have not a cotton shirt to their backs. In the whole face of our foreign relations we have the strongest reason to believe that the consumption of cotton will be increased at a higher rate than at present.

Our limits are already exhausted, but we must advert to the fertility of the soil. A bale of cotton to the acre, in the Brazos bottoms, is a fair average crop. Many planters have produced one and a half, and some as high as two bales. These lands have been more tried than others, but it is unquestionably true that on the Trinity and Red River, as well as the Colorado, the Guadalupe, and the Cibola, planters have been highly successful. In several letters from reliable friends residing in these valleys, we have statements of cotton crops which would seem incredible to the ears of Alabama or Georgia planters. We do not believe that any money put out at interest at the highest rates, is as good an investment at the present time as the cotton lands of Texas. These will double the average product of Alabama, Georgia, South Carolina and Tennessee; while with a railroad system such as we must have in a few years, the cost of getting the cotton to market will not be more than is now the case in the interior of those States.

There is another important fact known to planters in Texas, especially in the western part. It requires less labor to cultivate a crop than in the other States. One hand can tend to a third more land, in consequence of the nature of the season and fecundity of the soil. Where land may not produce a bale to the acre, still it is very usual to make a crop of ten bales to the hand. It requires, therefore, less capital for a plantation in Texas than in the other States; and a cotton planter may live a hundred miles in the interior, and yet make as much money as a planter near the Mississippi river, with all its superior facilities of transportation.

Our circulation extends to our surrounding sister States, and numbers some of their influential public men, but we do trust that our contemporaries of the press in Mississippi, Alabama, Tennessee, Georgia, and South Carolina, will do us the favor to extend the circulation of these facts through their excellent journals. We have certainly underrated the facts in our estimate of the cotton area of Texas. Time will prove this.

ATLANTIC & GREAT WESTERN R. R.—The stockholders of this company held their annual meeting at Mansfield, on the 8th inst., for the election of officers, when the following named gentlemen were elected Directors: Gen. C. S. Ward, of Pa.; Homer Ramsdell, of New York City (President of New York & Erie Railroad); William Coolman, Rayman; Mavin Kent, Franklin; L. V. Bierce,

Akron; John Pardee, Wadsworth; B. B. Clark, Ashland; Wm. Bushnell, Mansfield; Jacob Riblet, Galion; W. W. Conklin, Marion; J. C. Brand, Urbana; Geo. Carlisle, Cincinnati.

After being duly qualified, the newly elected Board organized, and elected their officers: C. S. Ward, President; L. V. Bierce, Vice President; J. W. Tyler, Secretary; E. P. Brainard, Treasurer.

[From the Lond. Civ. Eng. & Arch. Jour., May, 1856.]  
ON STEEP GRADIENTS OF RAILWAYS, AND THE LOCOMOTIVES EMPLOYED.

By CHAS. R. DRYSDALE, Assoc. Inst. C. E.  
Read before the Institution of Civil Engineers, April 8th, 1856.

#### CONCLUDED.

The engines used on the line were probably not well adapted for the traffic and indeed for such short inclines, the benefit of the stationary engines was very doubtful; there seemed, however, to be some propriety in using them for the passage of long Alpine gradients, as a rope could be made to work a length of 6 miles, and thus steeper gradients might be adopted—even 1 in 25—avoiding thereby great expense in constructing viaducts, &c.

ST. GERMAIN'S ATMOSPHERIC RAILWAY.—The gradient at the St. Germain's incline was 1 in 33 for the distance of fifty chains, and the total length of the inclination was 1.46 miles, with an average gradient of 1 in 43.

From June 2d to August 18th, 1855, the number of ascents=1413; the weight of carriages lifted=73,241 tons. The total cost of working, including tallow, engine-men, coal, water, &c.,=£612 10s. The cost per mile of ascent=5s. 9 $\frac{1}{2}$ d. The average weight raised per train=51.8 tons. The cost of coal=20s. per ton. Economically, leaving speed out of consideration, 1 lb. of coal raised 31,126 lbs. 1 foot high.

The following summary of results was given:

Semmering Locomotives.—Total h. p. exerted=380 h. p.; to lift the train=285 tons; h. p. per ton of motor=5.2 tons. Economically (irrespective of speed), one lb. of wood raised 82,208 lbs. 1 foot high.

Giovi Locomotives.—Total h. p. exerted=444 h. p. per ton of motor=5.9 h. p. economically (irrespective of speed), 1 lb. of coke raised 169,600 lbs. 1 foot high.

Glasgow Stationary Engine.—Total h. p. to raise the train=442 h. p., without the h. p. to lift the rope; economically, 1 lb. of slack raised 45,700 lbs. 1 foot high, irrespective of speed.

St. Germain's Atmospheric System.—One lb. of coal raised 22,063 lbs. 1 foot high irrespective of speed.

These results, as compared with the alleged duty of the Cornish boiler, one million pounds 1 foot high, were still far below laboratory duties.

April 15.—The discussion being renewed on Mr. Drysdale's Paper, was continued throughout the evening. It was stated that on the Oldham incline, 1 $\frac{1}{2}$  miles in length, with a gradient of 1 in 27, a tank engine, weighing about 27 tons, drew at the rate of 15 miles per hour, a train of nine loaded carriages, weighing 50 tons. The dimensions of the engine were—leading wheels, 3 ft. 6 in. diameter; driving wheels (four coupled), 5 feet



diameter; cylinders 1 ft. 3 in. diameter; length of stroke 2 feet.

It was argued that it was extremely difficult to establish any useful comparison between the working of various inclines, in consequence of the dissimilarity of conditions, of local circumstances, and of the different modes of keeping account of the expenses. That instead of affixing the limit of adhesion, as on the Semmering, at eight times the weight on the wheels, as compared with the force of the pull of the engine, it would be practicable to ascend much greater inclines with only five times the weight to the drag of the engine. That the Semmering engines could not be received as any improvement upon the construction of the engines employed ten years ago at the Lickey incline, where two small engines had been in the habit of drawing up a gradient of 1 in 37, trains of 50 loaded wagons, weighing at least 250 tons, at a speed of  $6\frac{1}{2}$  miles per hour; therefore, that one of these comparatively small, light engines would be quite able to haul 165 tons over the Semmering incline, at a speed of 11 miles per hour.

Though it could not be denied that English railway engineers were formerly prejudiced against any steeper incline than 1 in 100, and had believed that gradients of 1 in 50 could only be worked by means of ropes, yet it must be remembered that fifteen years ago Halifax was approached by a gradient of 1 in 44, and that twenty-two passenger trains per day, besides goods trains, were, without difficulty, conveyed over that incline by locomotives. There was, therefore, nothing new in these steep inclines, nor in the manner of working them. It should also be mentioned that the result of the later experience went to prove that it was more advantageous to rely on the locomotive than on any system of ropes. Not only had the latter system been abandoned on the Euston incline (London), and at Miles Platting incline (Manchester), but even at Oldham, where there was a gradient of 1 in 27 for  $1\frac{3}{4}$  miles, the rope was taken away two years ago, and the traffic was now entirely dependent on locomotives.

It was urged, that as early as 1839-40 the Lickey incline had been freely ascended by locomotives conveying trains, without any break in the course; the conditions of the Lickey and of the Dainton inclines, situated on the course of the lines were very different from those of terminal inclines, such as the Oldham, Halifax, Manchester, &c.

The sharp curves of not more than 10 chains radius, on the Semmering, must be taken into consideration, as on a gradient of 1 in 42; they would materially influence the working of the engines at even a moderate speed. The question was whether it was necessary to have such heavy engines as those of the Engerth construction, or whether it was not more convenient and economical to work inclines by means of two coupled engines, as at the Giovi incline. The latter opinion was strongly contended for, as also that generally the inclines in England were worked better, cheaper, and more regularly than that of the Semmering. In the year 1833, locomotive engines frequently ascended the St. Helen's incline, of 1 in 30, although the traffic was worked by means of ropes.

Particulars were given of some experiments made with an engine intended for the Santander and Alar Railway, in Spain; from which it appeared that upon an inclined plain, at Sheffield, about 300 yards in length, and rising 1 in 27, the engine drew up  $23\frac{1}{2}$  tons (exclusive of the tender), at a velocity of about  $2\frac{1}{2}$

miles per hour. The same engine, when tried on the Lickey incline, on a foggy day, with drizzling rain falling, took up in the first experiment a load of nearly 46 tons, in six wagons, at an average rate of about 10 miles per hour, and in the second experiment  $29\frac{1}{4}$  tons, in four wagons, at a mean velocity of  $18\frac{1}{2}$  miles per hour.

It was again insisted that circumstances varied so much as to render comparison of working the inclines almost impossible. It was necessary either to have special experiments under special circumstances, or to have such a large number of experiments as to arrive at the truth by taking the average of the results. It was evident that the load that could be hauled by an engine, was in proportion to the weight that could be put upon the driving-wheels; but that was limited by circumstances.

In order to arrive at some idea of the relative advantage of employing one very powerful, or two less powerful engines, two engines of equal power were taken, their speed and pressure compared, and a similar load of 280 tons, was placed behind each. It was thus found that the two engines, when coupled together, took both loads up the same incline in the same time that each had taken up the half load separately.

At Edge-Hill, Liverpool, there were three inclines, of 1 in 48, 1 in 90, and 1 in 56, respectively. These were still worked by ropes, and stationary engines, because, being situated in tunnels, it was found that the condensation of the steam on the rails when locomotives were tried, so lessened the adhesion, that in these particular cases it almost amounted to an impossibility of carrying out that system.

The important point to consider was the amount of adhesion to be obtained: one-eighth the weight was contended to be a fair average, as under certain circumstances of weather, &c., it fell to one-tenth, or one-fifteenth. That point being determined, the rest was a question of the advantageous employment of steam and the construction of the engines themselves.

It was stated that the Paper should be received as a record of facts, brought by the author under the notice of the Institution, rather than with a view to establishing any particular ideas as to modes of working inclines.

It must be evident that the system of working the Giovi incline by two of Messrs. R. Stephenson & Co.'s coupled engines was decidedly better and more economical, than the system of using such enormously heavy engines, as those constructed from the Engerth design for working the Semmering incline. It was decided more economical, as well as more convenient, to be able to work an incline by merely coupling together the ordinary engines of the line, than to have engines constructed expressly for the duty of ascending steep gradients, and unfit for the other portions of the line. Besides, the injury to the permanent way by such enormously heavy engines must be considered, when comparing their duty with that of two engines, whose weight was so much better distributed.

Circumstances of climate would always affect adhesion;—in the fine dry cold climate of Norway, inclines could be advantageously worked; whereas in London fog, or even with the ordinary moisture of a dewey night, the adhesion would be materially impaired.

Ropes had been generally superseded by locomotives, but it should not be rashly de-

cided to abandon them entirely, as there were situations where steep terminal gradients might still be advantageously worked by them; whereas it would be preferable, or even almost indispensable, to work the inclines in the course of a line by locomotive power. The difference between current and terminal inclines must always be considered. The facts observed and collected by the author would be found valuable as data, from whence every engineer would draw his own conclusions, and apply them so as to meet the peculiarity of his own case.

In conclusion it was urged that, with regard to adhesion, no *a priori* arguments should be relied on, but facts alone should be had recourse to, and these, it was asserted, would be found to give the power of adhesion as being from one-eighth to one-tenth of the weight on the wheels. It was thought to be of great importance that the question of the comparative economy of working inclines by locomotives or by ropes, should be clearly investigated. In hilly districts, if gradients of 1 in 20 could be worked with facility, the construction of many costly viaducts and other structures might be avoided; and, of course, the less the expense necessary to be incurred in the formation of any railway the greater chance was there of its being satisfactorily executed.

[From the Chicago Democratic Press, July 19, 1856.]

#### CONSOLIDATION OF RAILROADS.

At a meeting of the stockholders of the Central Military Tract R. R. Co., held in this city on Wednesday, it was voted to consolidate with the Chicago, Burlington and Quincy Company. The terms of the consolidation were ratified by the latter, of which the following is the substance:

The name of the consolidated company shall be the "Chicago, Burlington and Quincy Railroad Company."

Each stockholder in the Central Military Tract Railroad Company, in exchange for every share of stock he may hold in that Company, shall be entitled to one share of stock in the consolidated company.

Each stockholder in this company shall be entitled to one share of stock in the consolidated company for every share held in this, in addition thereto shall be entitled to one share in the consolidated company, for every two shares held in this company; upon payment therefor within one year, of sixty dollars, with interest thereon at the rate of ten per cent. per annum, and in case any stockholder shall be entitled to a fractional or half share, he may receive a whole share, on payment of eighty dollars therefor, and interest as above, or if he elect not to receive said share, he shall be paid twenty dollars for said fraction.

The rolling stock of the Chicago, Burlington and Quincy Railroad consists of 27 locomotives; 6 first class passenger cars; 3 second class do; 51 platform freight do; 116 house freight do.

That of the Military Tract Road, numbers 19 locomotives; 6 first class passenger cars; 2 baggage do; 50 coal do; 51 platform freight do; 116 house freight do.

The Military Tract Company pay a premium or bonus of 25 per cent. for the stock of the Chicago, Burlington and Quincy Company.

We are glad this consolidation has been effected, as it will materially advance the interests of both companies, and facilitate the



transaction of their business. If we mistake not the name of the Chicago and Aurora was changed by the last Legislature to the Chicago, Burlington and Quincy Railroad. This line extended from the Junction on the Galena road, thirty miles west of the city to Mendota, forty-six miles. The Central Military Tract extended from Mendota to Galesburg, eighty-four miles. The whole length of the line is now therefore one hundred and thirty miles. We presume that other consolidations will be effected with the Northern Cross, which extends from Galesburg to Quincy, and the Peoria and Oquawka, which on this route extends from Galesburg to Burlington, by which the entire line would become the property of one company. It would as it seems to us be mutually beneficial to all parties. The different roads or at least those parts of them mentioned above, are all operated by the same company, and so far as the public are concerned, the practical working is the same as if they were consolidated.

**THE MEXICAN GULF AND HENDERSON RAILROAD.**—B. F. MARSH, Esq., engineer of the above railroad (formerly called the Birkville railroad,) of which A. W. THOMPSON, of New York, is President, has been engaged, for the past week, in making some preliminary surveys in the neighborhood of Bolivar point. He informs us that the company have already purchased the iron for 25 miles of the road, also one locomotive and ten freight cars for transporting materials. This road, he says, will be built with the utmost dispatch, and 25 miles will certainly be completed before the 1st of February next. The object of Mr. MARSH's present visit, is to select a suitable point for commencing the road. This point, according to the charter, must either be at Bolivar Point, or at Sabine Pass. He has not yet decided between them.

The charter requires the road to be built from one of these points through Nacogdoches to Henderson in Rusk county, the distance being about 200 miles, and 25 miles must be completed by the 1st of February next, or a forfeiture will follow. Mr. M. says about 250 hands will be on the spot to commence operations, in about six weeks from this time. A part of these hands will commence cutting ties, while another portion will be employed on the graduation, and another in track-laying. This road probably passes through the best timbered region in Texas, which, of course, is a great advantage to the company. The 25 miles of iron is already purchased and is only awaiting, in New York, advices from Mr. MARSH, as to what point it shall be shipped, when it will be immediately forwarded. Our readers will remember that we published some strung assurances in regard to this road, some few months ago, on the authority of Commodore MOORE, who appears to be interested in it.—*Galveston News.*

#### LIABILITY OF DIRECTORS FOR COOKING ACCOUNTS.

We copy from *Herapath's Railway Journal* the following excellent article on this subject. It is one of these subjects connected with railroads that has yet to receive the attention of our legislators, and the earlier it is given the better it will be both for the interests of the railroads and the people:

It has been our opinion, and we have always held that directors of railroads, and of

course of other joint-stock companies, are liable to make good any fraudulent payments of dividends; but we never went so far as to say that they were liable to a criminal prosecution at the bar of the Old Bailey. It would appear, however, by the opinion of Lord Campbell, that they are actually arraignable as conspirators against the public.

We had looked at it in reference to the shareholders only, and not to the public, or we should have come, most likely, to the same conclusion as our learned Lord Chief Justice.

In giving judgment on the case of an English shareholder, placed by the Irish Master in Chancery as a contributory to the Tipperary Joint-stock Bank, so seriously swindled by that supreme scoundrel John Sadleir, with the complicity of his brother James, the Master of the Rolls said—

"That he fully assented to the opinion expressed by Lord Campbell, to the effect that if a dividend were paid out of the capital of a concern when no profits had been made a gross fraud would be practiced, and the directors were not only civilly liable to those whom they had deceived and injured, but they were guilty of a conspiracy for which they were liable to be prosecuted and punished. There could be no doubt that a conspiracy by falsehood (as by a fictitious dividend) to raise fictitiously the market value of shares of a railway company, or any other joint-stock company, that the Queen's subjects may be deceived and injured, and at their expense a profit may be made by the conspirators, would be an indictable offense."

These observations of the learned Judge Campbell, in which the Irish Master of the Rolls concurs, had escaped us, but we have no doubt that the law, as laid down by him, is correct. If parties are indictable for fraud and swindling, those who have the management of joint-stock concerns, who by suppressing facts, or doing aught else, for the purpose of keeping up false appearances, and thereby giving an artificial value to things, and deluding the public into paying high prices for articles comparatively worthless, must be amenable to the law for their conduct.

It has hitherto been considered by some railway directors as a trifling offense to give a false value to shares by unfair accounts, and as, indeed, not punishable by law, and at the most only cognisable by a court of equity. They will now learn, not only that they are civilly liable to the concern for the sum improperly divided, but that as regards parties who buy on the faith of their statements, they are liable to figure in a criminal court as conspirators.

Let it not be supposed that this applies only to the declaration of dividends where no profits have been made. It is equally applicable to those directors who by their statements represent greater divisible funds than have been realised. For as observed in the judgment, it includes all cases whereby falsehood, fictitious dividends are made by which "the Queen's subjects may be deceived and injured."

For our part, we think nothing could do railroads so much good as one or two prosecutions and examples made of directors who do this. It would weed out the bad subjects who have here and there crept into directions, and prevent others from entering who regard the "director line" as so good a business. Nothing that can be done in the way of pun-

ishment against dishonesty can be other than good to railway companies. There are opportunities in these great concerns of endless frauds, and divers ways of making money at the expense of the public and the shareholders. A good check or two therefore occasionally in character and pocket would have a very beneficial effect.

Nothing but the fear of that could have induced that arch scoundrel Sadleir to put an end to his villainous existence. He cared little for the loss of money or the misery that he had inflicted. It was the infamy to which he would be exposed during his worse than worthless life, that roused his courage to commit the deed which has saved him from living scorn, detestation, and the galleys.

It appears to us that it would be a wise law for the Government to take all matters of fraudulent accounts in hand and to be the public prosecutor, making every case of conviction punishable with transportation, as well as of forfeiture of goods and chattels to make good the losses and injuries sustained by the victims.

Men who have lost have a great aversion to prosecute, which they consider throwing good money after bad, and upon this the concoctors of fraudulent accounts calculate. A public prosecutor would, therefore, be a great protector of the Queen's subjects. If it was known that such an officer existed, it would keep many a man honest who now sees no terrors in cooking accounts and cheating his fellow man. An old saw says, it is easy for a person to be virtuous who has no temptation to be vicious. We would wish not merely to take temptation away, but to replace it by terror, so that it may be said, "the certainty of punishment for vice keeps men virtuous."

#### HOW TO OBTAIN THE METAL ALUMINIUM.

The following method of obtaining the above-named metal is taken from a late lecture delivered in London, by Rev. J. Barlow, F. R. S., on the subject.

"Clay is a silicate of Alumina; in fact, three-fourths by weight of a portion of pure Clay are silica. Of this silica one-half is oxygen, the other half is silicium, a substance altogether new in its properties; it is not affected by water or by air and it can be kept in either, it has no luster, or any other resemblance to a metal; it is analogous to carbon.

Now it is important to notice that, it was not from silica (the oxyd,) but from the fluoride and chloride of silicium that Berzelus obtained this substance. This fact, perhaps, instigated Wohler's successful attempt to decompose the *chloride* of aluminium (a fusible and volatile substance,) by the vapor of potassium, which has no effect on the oxyd of aluminium. But the production of the chloride of aluminium demands a concentration of chemical power. The hydrated chloride, resulting from the solution of alumina in hydro-chloric acid, on being evaporated, decomposes the last portions of the mother-liquor, and the operation ends by the re-production of alumina. This difficulty was surmounted by CErsted; he caused the affinity of oxygen for carbon, and of aluminium for chlorine to act simultaneously, and under the most favorable circumstances, by chlorine gas being led over an intimate mixture of alumina and charcoal heated to redness in a porcelain tube. The anhydrous chloride was thus evolved in vapor, and condensed in a suitable receiver. The apparatus contrived by M. Deville for procuring this substance, was exhibited. Wohler's



process of obtaining aluminium from its chloride is well known. The following modification of that process, devised by M. Deville, was shown in action.

A tube of Bohemian glass 36 inches long, and about one inch in diameter, was placed on an empty combustion furnace constructed for the purpose. Chloride of aluminium was introduced at one extremity of the tube; at the same extremity a current of dry hydrogen gas was made to enter the tube and was sustained till the operation was finished. The chloride was greatly warmed by pieces of hot charcoal, in order to drive off any hydrochloric acid it might contain; porcelain boats, filled with sodium, were inserted into the opposite extremity of the tube; the heat was augmented by fresh pieces of glowing charcoal until the vapor of the sodium decomposed that of the chloride of aluminium. Intense ignition usually attends this re-action. At length the aluminium was liberated in buttons, which were found in the boat adhering to a substance consisting of the mixed chlorides of aluminium and sodium. The boat was now transferred with its contents to a porcelain tube, through which hydrogen gas was passed. At a red heat, the double chloride was distilled into a receiving vessel, attached to the tube for the purpose; the buttons of aluminium were collected, washed with water, and subsequently fused together under a flux consisting of the double chloride.

Another method of obtaining aluminium from the chloride has been adopted with success. It is as follows;

4.200 grammes of the double chloride of aluminium and sodium (*i.e.*, 2.800 grammes chloride of aluminium, and 1.400 grammes of common salt,) 2.100 grammes of common salt, 2.100 grammes of cryolite, thoroughly dry, and carefully mixed together, are to be laid in alternate layers with 840 grammes of sodium (cut into small pieces) in a crucible lined with alumina—a layer of sodium should cover the bottom of the crucible. When the crucible is filled, a little powdered salt is to be sprinkled on its contents, and the crucible, fitted with a lid, is to be introduced into a furnace, heated to redness, and kept at that temperature until a re-action, whose occurrence and continuance is indicated by a peculiar and characteristic sound, shall have terminated.—The contents of the crucible, having been stirred with a porcelain rod, while in their liquified state (this part of the operation is essential) are poured out on a surface of baked clay, or any other suitable material, the flux, &c., on one side, and the metal on the other.

In the experiment just described, the cryolite chiefly fulfils the office of a flux. But, twelve months since, Dr. Percy obtained aluminium directly from this mineral. Cryolite is a fluoride of aluminium and of sodium. Dr. Percy found that layers of this substance, minutely pulverized, and heated with sodium in the manner described in the last experiment, yielded aluminium. Cryolite is found only in Greenland.

#### PAPER FROM REFUSE TANNED LEATHER.—

If all the discoveries made within the year or two, in regard to materials not of value, to manufacture paper, should prove successful, there will be no lack of the article. It is now stated, that Lazare Ochs, of Belgium, has obtained a patent for making paper from the cuttings, of waste leather, and scraps of tanned leather. The manufacture of paper from leather is an old story, as an American

patent was obtained for such paper many years since; but Mr. Ochs' method of treating his leather to take out the tanning is worthy of attention for its simplicity. The scraps of tanned leather are placed in sieves on the ends of arms or spokes on a wheel, and are made to revolve in a stream of water, which operation, when continued long enough, washes out the tanning from the leather. After this, about 20 per cent. of old hemp rope is mixed with the scraps, and the whole is cut up and reduced to pulp, from which the paper is made. A very strong coarse wrapping paper is made in this manner.

#### IOWA RAILROADS. ACTION OF THE LEGISLATURE,

The correspondent of the *Gate City* gives the following synopsis of the action of the Legislature of Iowa resulting from the grant of lands recently made by Congress to that state for railroad purposes.

The bill confers the lands, rights, power and privileges granted to the State by Congress to the following named roads: The Burlington and Missouri R. R. Co. from Burlington to a point on the Missouri river, near the mouth of the Platte river; the Mississippi and Missouri R. R. Co., from Davenport via Iowa City and Fort Des Moines to Council Bluffs; the Iowa Central Air Line R. R. Co., from Lyons City northwesterly to a point of intersection with the main line of the Iowa Central Air Line R. R. near Maquoketa, thence on said main line running as near as practicable to the 43d parallel across the State to the Missouri river and to the Dubuque and Pacific R. R. Co., from Dubuque to a point on the Missouri river, at or near Sioux City, with a branch from the mouth of the Tete Des Morts to the nearest point on said roads. The lines of the several roads to be fixed and located before the first of April next. Maps showing the lines of location to be filed in the office of the Governor and Secretary of State. Such lines of location are not considered final, farther than it may be necessary to fix the limit the boundary within which lands may be selected by the said railroad companies.

The bill compels the said companies respectively to complete and equip 75 miles within three years from the 1st of December next, 30 miles in addition yearly thereafter for five years, and the remainder, on or before the first of December 1856, under a forfeiture of "all rights to the lands, &c., &c., hereby granted and remaining undisposed of by the company so failing to have the length of road completed in manner and time as aforesaid."

We have examined closely this provision, and endeavored in vain to find any penalty in the expression of the condition. It is quite as well as it is. It may prevent future useless legislation, for who ever knew of a company failing in obtaining at the hands of a legislature all their avarice would admit of asking. The roads to be constructed on a gauge of four feet eight and a half inches, to afford to other roads that may hereafter be constructed all necessary turnouts, sidings, switches, &c., and all necessary convenience for the transit of freight and passengers at rates not exceeding the regular tariff of charges on such roads so accommodated.

The bill protects the settler who held valid claims by actual occupation and improvement at the time the grant was made requir-

ing them to file their claim with the County Judge where the land claimed may be situated, within two months of the passage of the act, but he shall not be entitled to more than 320 acres, at the rate of two dollars and fifty cents per acre.

#### BALTIMORE AND ITS INTERNAL IMPROVEMENT SYSTEM—EARLY COMPLETION OF THE PARKERSBURG ROAD, &c.

The time is at hand when the city of Baltimore may be congratulated upon the rapidly growing extent of its business relations with the South and West, and when the most sanguine expectations of its friends will be realized. We propose to review this important subject, and in doing so to present some facts that will sustain our remark.

Our readers have not failed to notice for several months past the enlarged returns from the business of the Baltimore and Ohio Railroad—that great central connecting artery, whose throbbings, in healthful unison with numberless other arteries and veins, impart fresh vigor to the heart of our system—the city of Baltimore. With a long and an almost unprecedented winter to impede its operations, and with imperfect navigation in the western rivers during a great portion of the time, the revenue has increased for the past nine months in the sum of \$429,848 52 over the corresponding period of the previous year. At the same ratio of increase for the remaining three months, the aggregate will swell to \$4,300,000 for the fiscal year, being an increase of \$600,000, and equal to nearly 20 per cent.

The most gratifying feature of this steady increase in the earnings of this road, is the assurance that it is mainly the result of the *expansion of the trade of Baltimore*. Indeed, we are prepared to demonstrate this beyond question, and are glad to know that its truth is recognized by the company. It is gratifying to know, too, that the company has made, and is still making such changes in its policy towards the city as will prove it to be, beyond further question, a Baltimore work, and that its success ensures the city's prosperity. By these changes the local interests of Baltimore are so fully protected as sensibly to expand them, and to render the road more than ever popular with all classes of our citizens. The already extensive trade in coffee, manufactured sugars, and other specialties for which Baltimore is generally known to the country, is being further developed under the liberal arrangements now provided for the transport of these articles to the West, and the great and growing Northwest. Besides this, our domestic and fancy dry goods, hardware, shoes, hats, clothing, and general merchandise, are now carried to the West, and large quantities of agricultural products are brought from the West on Baltimore account, at such figures as yield to the company only the return for its proportion of the through rate, as is levied upon the property going from, or destined for the other large eastern markets—thus literally securing to the city of Baltimore "the full advantages of its geographical position."

It will be seen that this is a strong practical movement, and under its influence the company will doubtless continue to earn more revenue and realize a larger net profit than heretofore. This seems to be a natural result from the increased extent of its through business, as compared with shorter hauls, or higher rates for a more limited trade, with its power and cars unemployed. It is conceded,



we believe, that the working operations of this road can be conducted as cheaply as those of any long road in the country. It is hard to discover why this should not be case. The road is well built—the track (except that impaired by the heavy usage of the coal trade), the bridges, the tunnels, the work-shops, the rolling stock, and the machinery are all in good order, and adapted to their purposes; the fuel (a very heavy item of expense)—dug from the hills by the road side—is certainly cheaper than that used upon almost any other road in the country; the advantages of a double track are being considerably extended, the officers are comparatively few in number, and the general expenses are not large for such a work, and the men are experienced, and generally fitted for their duties. To our view, the two chief causes of the hitherto apparently large proportion of working expenses to revenue, have been the relatively *limited passenger trade* of the road, and the necessity of hauling most of the tonnage cars empty to the West. It is satisfactory to observe, therefore, that the attention of the company has been vigorously directed to these facts, and measures taken, so far successfully, to meet the case.

We have already intimated that the trade between the East and the West is becoming more equalized under an enlarged policy and renewed exertions. The tendency to this is so decided that its officers contemplate a change in the old proportions of one full car westward for five cars eastward, to one west for two east.

For an enlargement of its passenger business, the prospect is even more flattering. We may refer in this connection to the sales of through tickets at Cincinnati by the Little Miami R. R. (the key to all four of the great eastern lines) for last month, which show a complete reversal of their report for the same month last year. The figures are as follows:

*By the Central Ohio and Baltimore and Ohio Roads.*

|                                  |              |
|----------------------------------|--------------|
| To Baltimore and Washington..... | 390 tickets. |
| To Philadelphia.....             | 95½ "        |
| To New York.....                 | 107 "        |

Total through passengers from Cincinnati.....592½ "

*By the Ohio and Pennsylvania and Pennsylvania Central Roads.*

|                      |              |
|----------------------|--------------|
| To Baltimore.....    | 41½ tickets. |
| To Philadelphia..... | 254 "        |
| To New York.....     | 97½ "        |

Total.....393 "

The aggregate, it appears, is but three-fifths as many by the Pennsylvania Central as by the Baltimore road, while the latter sold a greater number of tickets to New York than its rival. The increase in the passenger revenue of the road for last month is about \$6,000, and it is made up entirely from the *through travel*. The line has already brought into Baltimore many new buyers who, taking advantage of its through tickets to New York stop here and add to the business of this market. It must be remembered, in corroboration of our argument as to the success of the road, that this sensible increase in its freights and passengers is not attended with a corresponding increase of cost to the company.

These encouraging results are assignable to the recent development of the eastern and western connections of the road, as well as to the improved energy and liberal policy of the company itself. We may especially note the marked improvement observable in our present leading western connection, the Cent. Ohio Railroad. Upon the opening of this line,

some eighteen months ago, it labored under an extraordinary degree of financial embarrassment, which rendered it comparatively inefficient as a connecting road. It has since struggled with varying fortunes, until it has at last assumed a position so improved in all respects as to warrant the strongest hopes of its future usefulness and success. The importance of this line to Baltimore cannot be rightly appreciated unless the subject is closely examined. Suffice it for our purpose to say that its revenue for the last month was \$52,300, against \$37,000 for June of 1855 (an increase of nearly 40 per cent., and about 15 per cent. above any previous month), and that of this amount more than one-half was derived from its connection with Baltimore; while of the \$246,000 returned from the *through* business of the Baltimore and Ohio Road for the same month, \$96,000, or nearly two-fifths, was derived from its connection with the Central Ohio Road. The strongest need of the Central Ohio Road—money and credit—having now been supplied to some extent, by its friends, and especially by its increased earnings, there seems to be nothing to prevent it from assuming the importance which its location and the large resources of its surrounding country ought to justify.

As an instance of the promptness with which business is now done by this route, we are assured that goods in quantities go through regularly between Cincinnati and New York in seven days; Philadelphia in six days; and Baltimore in five days. The Ohio river being nearly dry this month, the boats are all laid up, and the Baltimore and Ohio Road, is now dependent upon the Central Ohio for its through business, which continues large for the season, and amounts to about 450 tons per day in the transfers at Benwood and Bellaire.

The Cincinnati, Wilmington and Zanesville Road, straightening and shortening the line between Zanesville and Cincinnati, is an excellent improvement. It has already shown itself to be of value in uniting Baltimore with the rich and growing region of Ohio, through which it runs for 130 miles; and when it obtains an independent connection with Cincinnati, it will become much more largely patronized than now.

The Cleveland and Pittsburg Road—so called—is being rapidly extended to Wheeling from Wellsville, its present southern terminus, 39 miles above Wheeling. The line will unite Baltimore directly with Cleveland (and through Cleveland the great Northwest) by rail. It will be completed to Steubenville in September, and to Wheeling by November next.

The Steubenville and Indiana Railroad, running for 116 miles, from Newark to Steubenville, and nearly parallel with the Central Ohio Railroad, though not intended for a Baltimore connection, must not be lost sight of in enumerating our more immediate sources of trade. This road, at present united with the Baltimore and Ohio only by the river, will become closely connected with Baltimore by railroad, upon the completion of the line from Cleveland to Wheeling next fall.

Although not approaching completion as yet, it is proper to refer to the Connellsville Road, which is to bring Baltimore into the closest connection with Pittsburg and Southwestern Pennsylvania, and by the shortest and most favorable grade by which the Alleghanies are crossed by any route yet made, or in contemplation. We learn that the prospects of this very important improvement are

flattering, and that the new President and Engineer, Mr. Latrobe, who has just returned from a professional trip over the line, is well satisfied with the present condition of the work. About fifteen miles more will be opened in October, making 43 miles, or nearly one-third of the entire road completed and in operation. By November the floating debt and other embarrassments of the company are expected to be removed, and the work pushed on with renewed energy. Looked at in any aspect, this line is of the first importance to the city of Baltimore.

Lastly, but certainly not the least, there is the Northwestern Virginia, or Parkersburg Road. The Board of Directors of the Baltimore and Ohio having determined at its late meeting, on the 9th inst., that this road should be completed by authorizing the loan of its resources, the rails, which have so long laid in custom house bond, were loaded and dispatched on the next day, and they were begun to be laid at Grafton on last Tuesday, the 16th, under the supervision of Mr. Wm. D. Burton, Mr. Latrobe's Assistant. A portion of the iron is now being sent down the Ohio to Parkersburg on flat-boats, and by this time, probably, the rails are being laid simultaneously from both ends, the road bed being completed and now firmly settled, ready for immediate use. The President, Mr. Swann, is understood to have promised that the road shall be prepared for business by the 10th of next November, and we hope to be able to announce before the first day of the coming winter, that this all-important link in the great air-line between Baltimore and St. Louis is "a fixed fact." With a view to meeting the demands upon the company from its improved travel, they have begun the erection at Grafton—the Parkersburg junction—of a large and splendid hotel, capable of dining three hundred persons at a time. This desired improvement will be in readiness at the opening of the new road.

When it is remembered that Parkersburg is nearly 200 miles below Pittsburg, or but little over half the distance to Pittsburg above Cincinnati—while it is but 382 miles from Baltimore; that it is below most of the shoal places in the river that impede the navigation with Wheeling and Pittsburg; that *but twenty miles* of road need to be supplied between the river and Athens, Ohio, to unite it by rail to Cincinnati; that it is directly upon an air-line between Baltimore and Cincinnati, and—through Cincinnati—to St. Louis; that the distance to Cincinnati, Louisville or St. Louis, from New York, is less *through Baltimore by Parkersburg* than by any contemplated or any probable route—the great prospective value of this arm of our defences can scarcely be over-estimated.

It must be born in mind, while considering the advantages of these several lines, that they will not in any great measure conflict with each other, but will each contribute their quota to the general prosperity of the city of Baltimore and its greatest work—the Baltimore and Ohio Railroad.

## SOUTHERN PACIFIC,

OR,

### Texas Western Railroad Co. Agency.

THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

105 West Fourth Street Cin.



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, AUGUST 5, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD..... EDITOR  
W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, AUGT. 5.

#### THE PROSPECTS OF THE PACIFIC RAILROAD.

Whatever may occur hereafter, we consider certain facts clearly established in relation to the Pacific Road, which place its early completion beyond doubt.

1. A clear demonstration has been made that the Pacific Road is a commercial and a national necessity. The condition of California; the rapid growth of the Pacific territories; the increase of the Pacific trade; the vast wave of migration continually tending towards the center of the republic, have all gone to prove this fact beyond the possibility of a doubt. It is clear that the Pacific Road is one of those necessities which, in either a political, social, or national sense, demands, and will have a recognition.

2. Public sentiment has now been so inflamed and excited on this subject that it *does* recognize this necessity, and demands that all who have any control over the means to be used shall employ them to further this great design.

3. The elaborate and expensive surveys of the government have established the only preliminary point necessary to be known, viz: that the Pacific Railroad is *practicable*, at such a cost as is within the means of this country. They have demonstrated that there are three different routes entirely practicable; and that the South Texas route is practicable at quite a moderate expense. This route, too, lies in such a genial climate that the road can be run at all seasons of the year.

4. These points being all established, it only remains to initiate the work, under the authority and support of government. The constitutional objections are got over entirely by grants of land through the government domain; the grant being clearly for the interest of the government as a proprietor. This policy is settled upon, and in regard to Congressional action the only difficulty in the way is the *constant delay and dilatoriness* of Congress, even on this important subject. This session is drawing to a close, and the next will be a short one, yet nothing is done! Party warfare seems to engross all other subjects; and power, not the country, seems to be the object of men's regard. This is much to be re-

gretted, in a moral as well as political sense. The neglect of the public business by men in authority impairs the public morals. We believe it is now nearly, or quite four years since Congress provided for the explorations of the Pacific route. Those explorations were well made; were published at great expense, and have long been before the country; yet Congress has not even taken up or acted on the subject in any way! If this delay were necessary in order to acquire new information, or to concentrate means, it would be reasonable; but the contrary is the fact; the information we have, and the means cannot be got till Congress has acted in some way. We must know whether Congress will do anything—and what—before private persons and companies will undertake anything.

We have just been informed that the Texas Legislature has passed what is called the "Loan Bill," which grants, we believe, \$6,000 per mile to each road which shall be constructed according to the terms of the act. If this be so, the Texas Pacific Road, through Texas to El Paso, will, by aid of the lands and loan of Texas, be unquestionably made.—What then is left for government to do? Nothing but to secure the construction of the part from El Paso to San Diego, by a grant of lands. This Congress surely will do; but Congress should remember that to be well done, it should be done immediately.

#### THE GREAT PACIFIC RAILROAD.

An article in the New York *Herald* says that the passage of the Pacific Railroad Bill is delayed because some *private interests have not been consulted!* We know not precisely what is meant by this, but we do know that no private views or interests should stand in the way of great public enterprises. It seems to us a very extraordinary thing, if it be true, that Congress should suffer a scheme of this momentous importance—when its own committees are satisfied—to lie on its table, unacted on, only because all *private* interests have not been conciliated! We grant that it is desirable there should be as little opposition as possible to this great measure; but some opposition there is, and will be under all circumstances. It must be disregarded, and this great and noble enterprise must go on under the auspices and management of the majority.

The close of this session is near at hand, and the next session will be a short one. It is very desirable to all concerned that Con-

gress should take some initial on this subject, and take it soon. Time flies, and when flown never returns.

#### THE TEXAS LOAN BILL.

We learn that the "Loan Bill" has passed the Texas Legislature. This seems to be confirmed by the following paragraph in the *Houston Telegraph*:

"We learn, by private letters from Austin, that the River Bill passed on the 17th (July), and that the Loan Bill would certainly pass next day."

To the same effect are other private advices. We conclude, therefore, that the Loan Bill has actually passed; and if so, is a most decided step in favor of the Texas Western Railroad—the Texas Pacific Road. The Loan Bill will give probably \$6,000, possibly \$8,000 per mile, as a loan, to each mile of constructed road; and will, therefore, with the land grant, be sufficient for its construction.

#### A LONG AND INTERESTING TRAIN OF CARS.

On Friday last, August 1, occurred a very interesting Sabbath School celebration at Morrow, Warren county, Ohio. One feature in it was of great interest, in connection with railroads. A train arrived of *thirty-two cars*, containing 3,500 persons, mostly children. It was a beautiful sight. Owing to a curve in the road we could not see from one end to the other of the train, and it looked like an endless train. So carefully was this long train conducted that it met with not the slightest accident; and of the whole vast assemblage (probably 6,000) not a single person was in any way injured. When this is contrasted with the frequent accidents on other lines, it speaks in high praise for the management of the Little Miami.

#### BUFFALO & NEW YORK CITY RAILROAD.

—At a meeting of stockholders of the Buffalo & New York City Railroad, held in Warsaw a few days ago, the following named gentlemen were elected Directors: James Moore, John Wilkeson, Aaron Rumsey, Asa D. Wood, Augustus Frank, Samuel Swain, R. H. Heywood, George R. Babcock, H. S. Cutting, John A. McElwain, John B. Halstead, Horace Hunt, Samuel Hallet.

At a meeting of the Board of Directors, subsequently held, the following officers were duly elected: James Moore, Esq., President; Augustus Frank, Vice President; Geo. Colt, Jr., Secretary and Treasurer; Chauncey Tucker, Esq., Attorney.



Mr. Done was crushed under the cars on Friday of last week. He had been about seven miles out from Chicago, observing the progress of a gang of workmen engaged in making repairs, and anxious to make the quickest time to the city, signaled a freight train going that way, the speed of which was checked to about five miles per hour, when he attempted to get on, but made a false step, and was thrown under the wheels. One of his legs was crushed off at the thigh, and the other at the ankle. It was near twenty minutes before the discovery was made that he had failed to get on the train, and then alarm being felt for his safety, the train was backed, and he was found on the track, bleeding profusely. His friends were just in time to save him from being run over by another train.



He only spoke once, and that was to request to be moved from the main track to a side track. He was taken to the city, but it was found impossible to save him, as he had lost too much blood to have any chance for recovery. He survived the accident but a few hours.

We sincerely sympathise with his family, so suddenly bereaved, and that too in a home to which they had so recently repaired with the brightest prospects.

The death of Mr. Done will be a great loss to the Illinois Central Railroad. Men of his experience and energy are rarely found; and their loss is a loss to the community.

#### TEXAS AND ITS RAILROAD POLICY.

Our readers will remember that a convention of delegates from all parts of Texas was called, to meet at Austin, for the purpose of expressing the native sentiment of the people on the various lines of policy prominently before the attention of that State towards her railroad system. We have just received the official account of the proceedings of this convention, and give the reports of the committee in full, not only for their intrinsic interest, but to prove what we have always believed—that the great body of the people of Texas were in favor of the loan policy. The convention was numerously attended, and a business committee of one for each of the thirty-three districts of the State was appointed. This committee made the following report:

Your committee, to whom has been referred the subject of a plan which this convention should recommend to the Legislature, as the system which should be adopted for the encouragement of railroads, beg leave to submit the following report:

Only two railroad systems have been presented to and discussed by the people of Texas.

The first is familiarly known as the plan of giving lands and loaning money to such incorporated companies as shall have completed given sections of road, to enable them to continue consecutive sections, until the completion of their respective routes; the interest of the State to be guarded by a preference mortgage, and such securities as will make the investment safe.

This plan was first recommended by a convention at Austin, in 1851, and in one shape or another, it has since been repeatedly before the Legislature, until its general features are understood, and as your committee believe, sanctioned by the wishes of nine-tenths of the people of the State.

We think the public sentiment has been manifested by the general approval which the law providing so liberal a donation of land certificates has everywhere met; by the universal satisfaction in favor of the law setting aside the school fund (it being generally understood that it was a part of the policy to invest this fund by loaning it to such railroads as should complete given connected sections) by the result of elections wherever the issue has been made, and by the expression of the people in the primary meetings.

The antagonist system known as the "State Plan," in the opinion of your committee, orig-

inated with a few minds, and met little favor, but by persistent perseverance it has gained some prominent friends.

Against it, may be urged the necessity of so changing the constitution as to enable the State to contract onerous debts, and as it is now proposed, the making of routes a part of the organic law, before the wisdom of such routes can have been demonstrated. The creation of a large number of officers, who will often necessarily be chosen for any other qualities than their experience and competency. That the experience of all governments prove that States always pay higher for everything than individuals. The disagreement among the advocates of the system, as to whether the State should build and run the roads, or merely own and lease them—and last, though not least—the entire insecurity of the traveling and freighting public, when remedies for damages and losses can only be obtained by the slow process of Legislative relief.

The experience of all States, so far as your committee are advised, is against such a system of internal improvement as applied to railroads.

The great argument which has been urged in its favor, in the opinion of your committee, assumes more than one fallacy.

It has been urged that railroads in Texas cannot be built by private enterprise, even with liberal State aid—because it is said, they will not pay remunerating profits. And therefore it is urged that the public spirited men of the country will be sacrificed for the promotion of enterprises which will benefit all alike.

It must be admitted that in all public enterprises much of the burden necessarily falls upon men of enlarged and liberal views.—Such generally look not to immediate profits, but are often rewarded by their very liberality. And it may be here answered that if railroads will not pay they should not be built by the body politic; because it would be an unjust tax, the benefits of which would be unequally distributed. But, in the opinion of your committee, the "Loan Policy" which is proposed would render it probable, if not certain, that none but paying routes would be constructed; and your committee believe that long before the dispute about remuneration could be settled, the great routes of the country would be built, and would afford remunerating profits.

Against the "Loan Policy" it has been urged that the investment would be insecure. To this it may be answered that no money is to be loaned until a valuable section shall have been completed; that the land donation will defray at least one-third of the cost, and if the whole road will not secure one-third of the cost, it is an unanswerable argument against a plan which proposes for the State to pay the whole expense.

But it has also been urged that the State has not sufficient funds to favor any considerable enterprises; that the country most convenient to the coast would consume all the funds, and the interior portions of the State, whose greater distance from market renders railroads the more necessary, could not be benefited.

This assumption proves the want of diligent calculation. It is an admitted fact that, including the School Fund already appropriated, the State has ample means to provide for the loan of the three millions of dollars to aid railroads.

Your committee here submit a few careless calculations by a most practical and successful financier.

Assuming that the State of Texas has of United States 5 per cent. stock in the Treasury, and subject to loans to railroad companies, the sum of \$3,000,000, and that said fund, and interest accruing thereon from the 1st July, 1856, and premiums realized from sale of said stock, was lent at the rate of \$6,000 per mile on sections of 25 miles completed of railroad, and at 6 per cent. interest, payable annually; and also assuming that the railroad companies would construct railroads at the rate of 100 miles per annum for seven years, and at the rate of 150 miles per annum for seven years, and of 200 and 250 miles per annum thereafter; and also assuming that the companies' bonds were to fall due in seven years from their respective dates—how long would such a fund of \$3,000,000 last?

#### IT WOULD BE PERPETUAL.

|   |             |
|---|-------------|
| 1857—July 1—Cash on hand in Bonds.....        | \$3,000,000 |
| 1 year's interest, at 5 per cent.....         | 150,000     |
| 3 p. c. prem. on \$450,000 sold this day..    | 13,500      |
| Total.....                                    | \$3,163,500 |
| July 2—Deduct loan on 100 miles at 6,000      | 600,000     |
| Balance.....                                  | \$2,563,500 |
| 1858—July 1—Add 1 year's int. on \$2,550,000  |             |
| at 5 per cent.....                            | 127,500     |
| Add 1 year's int. on \$600,000 R. R. B.       |             |
| at 6 per cent.....                            | 36,000      |
| 2½ per cent. prem. on \$420,000 B. sold       |             |
| this day.....                                 | 11,010      |
| Total.....                                    | \$2,738,100 |
| July 2—Deduct loan on 100 miles at 6000       | 600,000     |
| Balance.....                                  | \$2,138,100 |
| 1859—July 1—Add int. on \$2,130,000 U. S. B.  |             |
| at 5 per cent.....                            | 106,500     |
| Add int. on \$1,200,000 R. R. B. at 6 per     |             |
| cent.....                                     | 72,000      |
| 2½ per cent prem. on \$410,000 U. S. B.       |             |
| sold this day.....                            | 10,250      |
| Total.....                                    | \$2,327,360 |
| July 2—Deduct loan on 100 miles at 6000       | 600,000     |
| Balance.....                                  | \$1,727,360 |
| 1860—July 1—Add int. on \$1,720,000 U. S. B.  |             |
| at 5 per cent.....                            | 86,000      |
| Add int. on \$1,800,000 R. R. B. at 6 per     |             |
| cent.....                                     | 108,000     |
| Add 2½ per cent. prem. on \$400,000 sold      |             |
| this day.....                                 | 10,000      |
| Total.....                                    | \$1,931,360 |
| July 2—Deduct loan on 100 miles.....          | 600,000     |
| Balance.....                                  | \$1,331,360 |
| 1861—July 1—Add int. on \$1,320,000 U. S. B.  |             |
| at 5 per cent.....                            | 66,000      |
| Add int. on \$2,400,000 R. R. B. at 5 per     |             |
| cent.....                                     | 144,000     |
| Add 2½ per cent prem. on \$380,000 U. S.      |             |
| B. sold this day.....                         | 8,550       |
| Total.....                                    | \$1,549,910 |
| July 2—Deduct loan on 100 miles at 6000       | 600,000     |
| Balance.....                                  | \$949,910   |
| 1862—July 1—Add int. on \$940,000 at 5 per    |             |
| cent.....                                     | 47,000      |
| Add int. on \$3,000,000 R. R. B. at 6 per     |             |
| cent.....                                     | 180,000     |
| Add 2 per cent. prem. on \$360,000 U. S.      |             |
| B. sold this day.....                         | 7,200       |
| Total.....                                    | \$1,184,110 |
| July 2—Deduct loan on 100 miles at 6000       | 600,000     |
| Balance.....                                  | \$584,110   |
| 1863—July 1—Add int. on \$580,000 U. S. B.    |             |
| at 5 per cent.....                            | 29,000      |
| Add int. on \$4,000,000 R. R. B. at 6 per     |             |
| cent.....                                     | 216,000     |
| Add 1½ per cent prem. on \$350,000 U. S.      |             |
| B. sold this day.....                         | 5,250       |
| Total.....                                    | \$834,360   |
| July 2—Deduct loan on 100 miles at 6000       | 600,000     |
| Balance.....                                  | \$234,360   |
| 1864—July 1—Add int. on \$230,000 U. S. B. at |             |
| 5 per cent.....                               | 11,500      |
| Add int. on \$4,200,000 R. R. B. at 6 per     |             |
| cent.....                                     | 252,000     |
| Add payment of loan of 1857.....              | 600,000     |
| Total.....                                    | \$1,097,860 |



|   |             |
|---|-------------|
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$197,860   |
| 1865—July 1—Add 6 months' int. on \$230,000 U. S. B., due Dec., 1864..... | 5,750       |
| Add 1 year int. on \$1,300,000 R. R. B. at 6 per cent.....                | 270,000     |
| Add payment of loan of 1858.....  | 600,000     |
| Total.....  | \$1,073,610 |
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$173,610   |
| 1866—July 1—Add int. on \$4,800,000 R. R. B. at 6 per cent.....           | 288,000     |
| Add payment of loan of 1859.....  | 600,000     |
| Total.....  | \$1,061,610 |
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$161,610   |
| 1867—July 1—Add int. on \$5,100,000 R. R. B. at 6 per cent.....           | 306,000     |
| Add payment of loan of 1860.....  | 600,000     |
| Total.....  | \$1,067,610 |
| July 2—Deduct loan on 150 miles.....                                      | 909,000     |
| Balance.....  | \$167,610   |
| 1868—July 1—Add int. on \$5,400,000 R. R. B. at 6 per cent.....           | 324,000     |
| Add payment of loan of 1861.....  | 600,000     |
| Total.....  | \$1,091,610 |
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$191,610   |
| 1869—July 1—Add interest on \$5,700,000 R. R. B. at 6 per cent.....       | 342,000     |
| Add payment of loan of 1862.....  | 600,000     |
| Total.....  | \$1,133,610 |
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$233,610   |
| 1870—July 1—Add interest on \$6,000,000 R. R. B. at 6 per cent.....       | 360,000     |
| Add payment of loan of 1863.....  | 600,000     |
| Total.....  | \$1,193,610 |
| July 2—Deduct loan on 150 miles at 6000                                   | 909,000     |
| Balance.....  | \$293,610   |
| 1871—July 1—Add interest on \$6,300,000 R. R. B. at 6 per cent.....       | 378,000     |
| Add payment of loan of 1864.....  | 900,000     |
| Total.....  | \$1,571,610 |
| July 2—Deduct loan on 200 miles at 6000                                   | 1,200,000   |
| Balance.....  | \$371,610   |
| 1872—July 1—Add interest on \$6,600,000 R. R. B. at 6 per cent.....       | 396,000     |
| Add payment of loan of 1865.....  | 900,000     |
| Total.....  | \$1,667,610 |
| July 2—Deduct loan on 200 miles at 6000                                   | 1,200,000   |
| Balance.....  | \$467,610   |
| 1873—July 1—Add interest on \$6,900,000 R. R. B. at 6 per cent.....       | 414,000     |
| Add payment of loans of 1866.....   | 900,000     |
| Total.....  | \$1,781,610 |
| July 2—Deduct loan on 250 miles at 6000                                   | 1,500,000   |
| Balance.....  | \$281,610   |
| 1874—July 1—Add interest on \$7,500,000 R. R. B. at 6 per cent.....       | 450,000     |
| Add payment of loan of 1867.....  | 900,000     |
| Total.....  | \$1,631,610 |
| July 2—Deduct loan on 250 miles at 6000                                   | 1,500,000   |
| Balance.....  | \$131,610   |
| 1875—July 1—Add int. on \$8,100,000 R. R. B. at 6 per cent.....           | 486,000     |
| Add payment of loan of 1868.....  | 900,000     |
| Total.....  | \$1,517,610 |
| July 2—Deduct loan on 250 miles at 6000                                   | 1,500,000   |
| Balance.....  | \$17,610    |
| 1876—July 1—Add int. on \$8,700,000 R. R. B. at 6 per cent.....           | 522,000     |
| Add payment of loan of 1869.....  | 900,000     |
| Total.....  | \$1,439,610 |
| July 2—Deduct loan on 200 miles at 6000                                   | 1,200,000   |
| Balance.....  | \$239,610   |
| 1877—July 1—Add int. on \$9,000,000 R. R. B. at 6 per cent.....           | 540,000     |
| Add payment of loan of 1870.....  | 900,000     |
| Total on hand.....  | \$1,679,610 |

Thus the operation of lending, as above stated, for twenty years, would aid in constructing 3,100 miles of roads, and leave a balance at the expiration of twenty years, of unexpended fund, of \$1,679,610, with railroad bonds to the amount of \$9,000,000, with an

annual revenue of \$540,000 per annum; thus gaining for the State a profit of \$7,681,000 capital, and an increase of revenue from this source over the year 1857, of \$390,000, being difference of interest; and assuming that the roads, with their rolling stock, depots, all would be worth \$36,000 per mile, the increased wealth in the State from railroads alone, thus created, would be \$93,000,000, which, if taxed at  $\frac{1}{4}$  per cent., would produce a revenue to the State of \$232,500 per annum. The foregoing calculations do not set aside any revenue for schools during the period in question. It is supposed that if the property which would be created by means of the loaning system, was taxed for the benefit of schools, a sufficient, and after a few years an abundant fund would be thus available for this purpose.

It has been objected by the advocates of other plans than the loaning plan, that the means of the State would be both insufficient and liable to be wasted by inefficiency, or dishonesty of the railroad companies and future Legislatures combined.

That it is sufficient for the number of miles per annum herein contemplated, is shown; the squandering of the money your committee admit is possible, if dishonesty is allowed. And on this subject let your committee ask whether it is likely that the State will be more liable to dishonest speculations as a lender of money on mortgage, or as a payer of accounts and contracts entered into by hundreds of salaried agents and sub-agents. Your committee's idea is, that if the law authorizing the lending of money secured by mortgage on roads completed, also stipulates for punctual payment of interests and principals as they become due, and requires and vests in a Commissioner (whose only salary shall be a commission of not exceeding  $\frac{1}{2}$  per cent. on all sums of interest collected, and not exceeding 1-5 per cent. on all sums of principal collected) full authority to sell after sixty days' notice any of the property mortgaged or owned by the debtor, or so much thereof as shall be necessary to pay the interest, and in that case also the principal on which interest may be in arrears and unpaid, that the companies borrowing money will not hazard becoming defaulters, nor will there be any necessity for such defaulters, for with a bonus in lands which will be good security for the cost of the iron, and a loan from the State of an amount quite sufficient for grading and timbering the roads, and to pay for the necessary cars in constructing the roads, the companies would only have to provide for the payment of interests as they become due, and for this purpose they will have also the earnings of the roads. As for the payment of the bonds as they fall due, it surely will not be a difficult task to negotiate another loan to pay the first one to the State of \$6,000 per mile, on a road in operation, and on which there would be no lien after the State had received the amount of its loan and mortgage, consequently the companies would own their roads for their trouble and the necessary contribution towards paying interest at a low rate.

Your committee believe that these calculations will clearly demonstrate to any impartial mind that the fund of three millions of dollars cannot be consumed, if proper safeguards be used, until a sufficient number of miles of road shall have been constructed to afford the facilities of transportation to the entire people of our widely-extended State.

There is this unanswerable argument in its favor:

It proposes the contracting of no debt, but only the use of means which at present are useless to the State.

It encourages no wild enterprises, for those who undertake them are first to use their own means, and to give ample security for the refunding of all which they borrow from the State.

It renders it certain that three times the amount of money loaned will be expended among the people; and the interest of each section of the country will cause a wholesome rivalry in pushing forward necessary roads, while at the end of twenty years the State, instead of being in debt, will have tripled the capital invested.

Your committee regard the land donation policy as settled by the universal approval of the people, and therefore to need little commendation from us. Liberal as it is, it may be stated that the greater the quantity which the donations may require, the better for the State and its inhabitants.

Every mile of road will increase the value of the remaining public domain in a compound ratio.

The certificates may, for a time, become an active property in a convenient form for those wishing to appropriate the public domain, and thus to bring it under taxation. It is, therefore, a system which, in the opinion of your committee, should be adhered to.

Therefore, your committee recommend the adoption of the following resolution:

*Resolved*, That this convention recommends to the Legislature the adoption of the system known as the "Loaning Policy," and to make it effective, propose that the State shall loan to all railroad companies which shall have completed twenty-five miles of road, a sum approximating to one-third of the cost of construction; not less than six thousand, nor more than eight thousand dollars per mile: *Provided*, that proper safe-guards are adopted by the Legislature, for the security of the School Fund thus invested.

A minority report from said committee was presented by Hon. John W. Dancy, of Fayette, and Major C. R. Johns, of Hays, as follows:

#### MINORITY REPORT.

*Mr. President:* We, the minority of the committee on resolutions, dissent from the report of the majority.

Two plans of internal improvement have been before the committee—the State plan and the loaning policy, with a bonus of sixteen sections of land for every mile of railroad constructed by a corporate company. We do not hesitate to give the State system a decided preference over the loaning policy, because it brings more power to the work, and will give us the advantages of railroad transportation many years sooner than the corporate companies can do under the loaning policy proposed. State credit will be at least from 40 to 50 per cent. better than that of any company in Texas for years to come, if we adopt the State system proposed by Gov. Pease. Transportation will be cheaper under such a system than it ever will be under any corporate system, by at least one-half. The companies will be involved in debts which they will be unable to pay until the country is settled sufficiently to make the roads profitable; and they will have a sickly and feeble existence for years to come. The amount loaned will prevent them from borrowing money only on second mortgage,



which would cause a ruinous sacrifice of the bonds.

In short, under the State system, 1,000 miles of railroads would cost about sixteen millions of dollars, and bring every settled part of Texas within about fifty miles of a railroad station, and the State would save 10,240,000 acres of the best lands in her domain, which she now proposes to donate to companies for the same amount of road that would not give half as much accommodation to the citizens of Texas. This land would be worth \$50,000,000 before 1,000 miles of railroad could be completed. This would furnish the money to pay for the roads, and continue the construction of the roads until all parts of the State could be supplied with cheap transportation.

Time will not permit us now to go into an argument to show that the positions taken in the majority report are not correct. The calculations and conclusions of the committee will, we doubt not, prove to be deceptive in less than three years after the experiment begins.

Texas companies cannot spare money from their business to build railroads; therefore, foreign capital must build them, or the State must pay for building them. If the State system is not adopted, we must pay companies to build roads for us, and then loan them money at least 4 per cent. less than they would have to pay upon the face of their bonds, which would be not less, we think, than thirty per cent. below par.

Future generations will look back with astonishment upon our acts, if we rush into such a scheme in preference to a system of State works which has so much to recommend it. Texas, owning her public lands, has more inducements to commence a system of internal improvements by the State than any State in this Union; because her lands would furnish the means to complete all her public works, and give her an ample fund, in all time to come, for public schools. We do not think the two systems have ever been fairly presented to the public. We have always been willing to see the two systems presented before the people, and fairly discussed, and abide the result. The loan policy advocates are not willing to give the people an opportunity to amend the constitution so as to adopt the State system. This rather indirectly acknowledges the weakness of their cause.

J. W. DANCY,  
C. R. JOHNS.

A resolution was offered by Hon. Mr. Green, of Hopkins, proposing to commence railroads simultaneously in the different sections of the State, and laid upon the table by a large majority.

The convention was then addressed by the Hon. George W. Paschal, of Travis, John W. Dancy, Major C. R. Johns, General Hugh McLeod, Hon. W. B. Ochiltree, and others, and then adopted the majority report and resolution, with only two dissenting voices, when the convention adjourned.

**MANITOWOC AND MISSISSIPPI RAILROAD.**—We are informed, on reliable authority, that the contractors, Messrs BARKER & HOOS, have purchased of an eastern manufacturing establishment, a locomotive, and six platform cars. They are now negotiating for a portion of the Iron, and it is confidently expected that the road will be in running order to the Branch Mills, by fall.—*Manitowoc Herald*.

[From the Harrison Flag.]

#### TEXAS WESTERN RAILROAD.

Previously we have offered no remarks, given no opinions upon the subject of the great internal improvement, that is now being prosecuted within the sound of a horn of this writing, and which is the improvement of the nation at large. It is not extravagant to assert that no other road of equal extent either constructed, or in course of construction was ever more fortunate as to bonuses donated by the State, natural adaptation of country to Railroads through which this line passes; the fertility of the soil and its varied productions; the countless numbers to be benefited and their willingness to pay for it; the large dividends it will actually pay stockholders &c., &c.

But as to the plan of building this road or others, a word might not be amiss. Well, as to that we are rather in a predicament, having heretofore favored a state system, and written some upon the subject to that effect; but an allusion to Mahomet's miracle will, (mayhap) relieve us. It will be remembered that the Great Prophet upon a time gave notice that at a certain place, he would preach and at the close of his sermon command a mountain nearby to come to him, both of which he performed. But the mountain refused to obey Mahomet unabashed remarked to the assembled multitude, "If the mountain will not come to me, I will go to the mountain."

We are for Railroads, and for that plan since we can't get our own, that best suits the people.

As to the vilifiers and wholesale slanderers of the present company, who denounce the road as a moonshine affair, they simply render themselves ridiculous to all who know and see what we daily see. What sort of moonshine about the Messrs. Brown, who are here with a large number of hands prosecuting a contract, and than whom the world never saw better men calculated? Any moonshine about the hundreds of barrels of pork they import, the beaves and muttens they pay for and slaughter and which are consumed by their hands upon the road? Not much moonshine in all that—it takes money to buy.—

[From the Harrison Flag.]

#### TEXAS BRIGHT AND DARK SIDE.

Improvement is the order of the day—"the progress of the age" is a term as familiar in the lonely cabin of the West, as in the Academy of Sciences—The spirit of enterprise has reached the Lone Star, and the eye of the world is turned to the Empire State of the South-West to note the progress of internal improvements now springing up under her fostering care. I propose in a few brief articles to set forth some of the advantages of a settlement in Texas, and speak of that portion of the State along the line of the Texas Western R. R., extending from the eastern boundary to Harrison County to El Paso on the Rio Grande.

It will be remembered that the Texas Western R. R. Co., lately sent out a scientific commission to explore this country along the parallel of 32 deg. north latitude—the object of this exploration was to note the topography and nature of the country, with reference to the construction of a railway, particularly the crossing of the streams, accurately fixing the latitude of the same, taking views and sketches for the purpose of mapping and illustrating

the character of the country, and to give a correct knowledge of the agricultural and mineral resources of the State along the line of this road. Col. A. B. Gray was at the head of this commission; his scientific character and experience as an engineer, are a sure guarantee for the faithful performance of the duties entrusted him, and his report will be read with interest and delight.

It is not my intention to anticipate that report—I would not forestall the desire if I could—I could not if I would. Of the result of those numerous astronomical and barometrical observations, extending from Red River in Louisiana to Western Texas I say nothing, that is entrusted to better hands, and will appear in due time.

But of the climate of Texas, the fertility of the soil, the prevailing winds, the character of the people, the beauty of spring and the fruits of summer, I may be allowed to speak and it may not be amiss to notice the timber, the stone, the water, the value of farms, and the price of improved lands, the beauty of the prairies, the countless herds of cattle that roam o'er these green pastures and flowering meadows, the courtesy and hospitality of the people, some scenes of camp life and a few incidents of travel will come in for a showing in their proper place.

These different topics will be treated, not in order as here set down, but as may with many others, best suit the convenience of the writer, and at the same time instruct and amuse the reader—These will form the bright side of the picture, and that there may be no illusion, and that the landscape may exhibit the form of the country with all its diversified scenery, a few dark shadows will be thrown into the painting, which will serve to brighten the interest of the beholder, and to throw into bold relief the prominent parts of the picture. These will consist of domestic slavery—the northers of winter, the diseases of the country the swamps and low lands, the scarcity of water, the quick sands and boggy places, the snakes, serpents, lizards, tarantulas, spiders, scorpions, and centipedes—and a few lighter shades will be blended in the finishing—these will be in the shape of mosquitoes, gaddies, ants, yellow-Jackets, ticks and red-bugs.

It may not be improper to remark that the writer spent some seven months in northern Texas in 1854 1855.

Although the country was then suffering under the direful effects of one of the most severe drouths that ever scourged this happy land, he then looked upon it as the pearl of the Union possessing all the elements of wealth, health, and social comfort. Born and reared in one of the middle states, still he is not unacquainted with frontier life, the primitive forests of Ohio have fallen by his puny arm, and the stately edifice of the northern cities still stand as a testimony of the work of his hands. He has also spent years of toil and travel in the wild and unclaimed regions of our country, extending from the frontier settlements of Kansas and Nebraska on the East to the Pacific Ocean on the West. He has traveled the desert plains of New Mexico, Utah, and Oregon, and crossed the snowy summits of the Western mountains. He has beheld rude nature as it springs into existence at the fiat of the Almighty Architect of the Universe, still preserving its primeval type its original sublimity and wildness. He has washed the golden sands of California and feasted on the grapes and pears in the valley of the Rio Grande. He has furnished for food and water in the great American



desert, and he has made a rich repast from the reeking entrails of the slaughtered Buffalo. He has been entertained with kindness in the adobe hut of the half-civilized Mexican, and he has enjoyed the voluptuous hospitality of the Southern planter.

\*\*\*\*\*

Marshall, July 2d, 1856.

# COAL vs. WOOD ON LOCOMOTIVES.

INTERESTING EXPERIMENTS ON THE ILLINOIS CENTRAL RAILROAD.

ILL. C. R. R. Co., Div. Supt's Office,  
Amboy, July 24, 1856. }

JOHN H. DONE, Esq., Gen. Supt:

DEAR SIR—In accordance with the plans heretofore arranged and determined on in our conference on the subject, I have caused engine No. 51 to be fitted up with suitable grates and drop door for burning coal. The work was completed at a cost of \$345 20; and on the 16th of June, ult., the machine was put to work.

I now make the following report of the facts in regard to the use of the engine since that time:

No. 51 completed its twenty-first trip last night, and has run 2,310 miles, doing regular freight train service between Wapella and Amboy. The results are highly gratifying, and it is a fixed fact that all wood-burning engines can be converted into coal-burners at an expense not exceeding \$275 each. I have caused the fire-box, flue sheets and flues to be thoroughly examined every trip, both at Wapella and Amboy, in order to detect any defect or injury which might result, and up to last night we have not discovered the slightest. The fire-box, flue sheets and flues are as free from scales and expansion as on the day the coal was put in the furnace. The flues have not leaked a drop, the engine has not lost a trip, nor has it ever failed for steam on any part of the road, although on six trips the run from Wapella to Amboy was made without shaking the grate bars. It is a strong piece of evidence in favor of the success of of the use of Illinois coal in locomotive engines, that the grates have not sprung or warped in the least, and are to-day as straight and clear as if new.

Here are the performances of several engines of the same class as the coal-burner, doing the same work with wood on alternate days.

The figures are taken from the monthly report of fuel consumed by engines on this division, the cost of wood being estimated at \$4 35 per cord, and coal at \$3 per ton:

|                         | Miles run. | Cords wood. | Cost.    |
|-------------------------|------------|-------------|----------|
| Wood Engine No. 57..... | 1,320      | 49½         | \$215 32 |
| " " 39.....             | 1,526      | 65¾         | 286 01   |
| " " 54.....             | 1,603      | 52¼         | 228 37   |
| " " 70.....             | 1,968      | 80          | 348 00   |
| " " 65.....             | 2,062      | 89¼         | 389 32   |
| Coal " 51.....          | 2,082      | 38½ tons.   | 115 50   |

These engines are engaged on freight train service between Amboy and Wapella, except No. 54, which is ditching, and Nos. 65 and 70, which run freights between Dunleith and Amboy.

The loads drawn by these engines have averaged fifteen loaded eight-wheeled cars, or a tonnage on each train of 300,000 lbs; and the cost of fuel per mile run has been as follows:

|             | Miles run. | Cords wood.   | Cost per mile. |
|-------------|------------|---------------|----------------|
| No. 67..... | 1,320      | 49½           | 16.3           |
| 39.....     | 1,526      | 65¾           | 18.7           |
| 54.....     | 1,603      | 52¼           | 12.6           |
| 70.....     | 1,968      | 80            | 17.6           |
| 65.....     | 2,062      | 89¼           | 18.8           |
| 51.....     | 2,082      | 38½ tons coal | 5.5            |

From these figures I institute the following comparisons, showing the saving to be made in the use of coal:

|             | Miles run. | Cost.    |
|-------------|------------|----------|
| No. 67..... | 1,320      | \$215 32 |
| 51.....     | 1,320      | 72 60    |

Saving in favor of coal.....\$142 72

|             | Miles run. | Cost.    |
|-------------|------------|----------|
| No. 39..... | 1,526      | \$286 01 |
| 51.....     | 1,526      | 83 93    |

Saving in favor of coal.....\$202 08

The coal used in No. 51 is from the upper vein of the Lasalle Mines, which seems to answer as well as that of the lower veins for locomotives, though the lower, for other purposes is esteemed best.

The amount of cinders and dust found in the fire-box after a trip of 110 miles is small, averaging say two bushels from 51½ bushels of coal—the average of coal used per trip.

In conclusion, I submit the above to your consideration, confident I shall be able to make a large reduction in the cost of fuel on my division for the coming year.

I am, very respectfully,

JAMES C. CLARKE,

Division Superintendent Ill. C. R. R.

## DR. BOUCHERIE'S PATENT PROCESS FOR PRESERVING WOOD FROM DECAY.

[Extracted from the Report of the Jury of the French Exposition, and other official documents.]

This patent is for an important improvement in the process of preparing timber, so as to preserve it from decay.

It is the invention of the eminent French chemist, Dr. Boucherie, who has devoted nearly twenty years in bringing it to perfection.

The system of Dr. Boucherie accomplishes two objects: first, that of expelling the sap; and, secondly, filling the pores of the timber with a preservative solution.

The manner in which this is effected is by applying the preserving fluid under pressure, so as to cause it to pass longitudinally along the fibres. The preserving fluid thus forces the sap out before it, and occupies its place.

The advantages which would result from expelling the sap, and replacing it with an anti-septic fluid, have been long known and the idea of effecting it by applying the fluid under pressure at the end of a piece of timber is not new, having been suggested and patented many years ago by Mr. Bethel. But the means then used did not accomplish the object in such a manner as to admit of its commercial application.

Hence the more expensive process of creosoting has been adopted—where the timber is totally immersed in the oil under pressure—which does not permit the sap to escape.

Dr Boucherie's process has been attended with complete success. The apparatus employed is of a very inexpensive character, and may be erected in a few days; it is capable of application on the most extended scale; and it is, in fact, very extensively employed at this time in preparing sleepers and telegraph posts for the French railways.

When the timber is under operation, the sap runs out from the ends in a clear stream, showing the amazing quantity of this fluid which is continued, and exhibiting the tubular structure of the wood, in the most striking manner; in fact, the preserving fluid will traverse a tree, twelve feet in length, with less pressure than is required to force it laterally through a plank three-quarters of an inch in thickness. When the sap is forced out the preservative fluid follows it, and its presence at

the end of the wood is ascertained by a chemical test.

Thus the sap and fermenting juices become completely expelled, and the timber becomes saturated throughout its length with the preserving fluid.

Important advantages arise in the employment of this process in this country. First, it may be applied successfully to Scotch fir, beech, elm, and other home-grown timber; secondly, it is not necessary that the wood should be dried or seasoned before being prepared, but, on the contrary, the operation is best effected within a few weeks after the tree has been cut down; thirdly, any cheap antiseptic fluids, such as solutions of sulphate of copper, or chloride of zinc, become perfect preservatives when applied in this manner; fourthly, no heat is required, and the wood is not rendered inflammable.

The result is a saving in first cost of about one shilling per sleeper as compared with Baltic timber creosoted; while the durability thus attained has been fully ascertained by the extensive trials already made in France, which will be further described.

SUCCESS OF THE SYSTEM IN FRANCE.—The first report upon this process was made in the year 1841, by a committee of the French Academy of Science, M. Arago being Chairman, upon the occasion of a pamphlet on the subject by Dr. Boucherie being read before that distinguished body, and which was consequently ordered to be inserted in the *Recueil des Savants Etrangers* and copies to be forwarded to the Ministers of Agriculture, Commerce, Public Works, Marine, Finance, and War.

In the years 1850, the French government appointed a commission of distinguished engineers of the Ponts et Chaussees, and again in 1852, the principal officers of Genise, to minutely investigate and report upon the merits of this invention, and which they accordingly did; the reports on both occasions, being favorable to Dr. Boucherie's invention; while, at the close of the recent Exposition, the French government marked its sense of the public benefit derivable from it by awarding to its inventor, the rare distinction of the large gold medal of honor, of which there were only four conferred on the representatives of the whole of France.

DURATION OF SLEEPERS PREPARED BY THIS PROCESS.—In the year 1846, 80,000 sleepers thus prepared, were authorized to be laid down upon the Northern Railway of France, together with a certain quantity of unprepared sleepers.

In this instance, the Company chose wood that decays easily, and which, on that account had been rejected for durable works. They employed beech, pine, alder, elm, and birch.

These sleepers were inspected every year, and each time were found in a perfect state of preservation. In May, 1855, Dr. Boucherie being desirous of exhibiting in the Exposition some wood prepared by this process, had a few of each kind of these sleepers taken up, and they were found in every instance to be in as perfect a state as when first laid down; the bark was unaltered, exhibiting two letters, the initial mark of the contractor, as clear and visible as when first impressed, while those sleepers which had been laid down unprepared had long since been reduced to decay. Upon these results being established, the greatest French Railway Companies, such as the Northern, Eastern, Nantes, &c., came forward, and required the immedi-



ate application of this process to the timber used upon their lines.

The following is an extract of a report upon the subject addressed to the jury of the late Exposition, by the administrators of the Northern Railway of France:

"The sleepers prepared by Dr. Boucherie's process are preserved in an absolute manner, it being impossible to foresee a limit to their duration, seeing the present perfect state of preservation exhibited by those sleepers laid down eight years ago. The Northern Railway Company has adopted this process in preference to all others.

"Since the year 1853, the Northern Company has ordered more than 300,000 sleepers prepared by this system, and further orders would have been given, if they had found contractors disposed to deliver upon the same terms; however, at the present time tenders are required for more than 200,000 of those sleepers."—September, 1853.

**TELEGRAPH POSTS.**—The principle, as applied to the use of telegraph posts, has been attended with equally favorable results, both as regards durability and economy. In the year 1846, the French Government substituted white pine posts prepared by this process for the usual oak posts, for telegraph wires on the Rouen line, and they are at the present time in as perfect a condition as when first erected.

This proves, and it is of importance to know, that timber thus prepared is equally efficacious when buried in dry or damp earth, and this is also exemplified daily by the telegraph posts placed all over the French territory. Mr. Alexander, inspector of telegraphic lines in France, officially reported the costs of the two kinds of posts employed on that line as follows:

|   |                                |
|---|--------------------------------|
| Prepared Pine Telegraph Posts.                                  | Unprepared Oak Telegraph Post. |
| Ordinary posts 5½ feet (4s. 5d.), . . . against 16fr. (2s. 0d.) |                                |
| Winding posts 9 feet (7s. 3d.), . . . against 40fr. (£1 12s.)   |                                |
| Crossing posts 16ft. (12s. 0d.), . . . against 70fr. (£2 16s.)  |                                |

The following letter on the subject is from the administration of telegraph lines in France:

"PARIS, August 14, 1855.

SIR: All the telegraph posts in the French empire have been prepared by your process.

The administration had 200,000 on the 1st of January last, and since that time have caused, 32,000 additional posts to be prepared.

The preservation of the posts thus injected with sulphate of copper is rendered complete, although the first were prepared and laid down in the year 1846.

It is with pleasure, doctor, that I am enabled to give you this information, in order that you may communicate it to the members of the jury of the Universal Exposition.

(Signed), H. DE VOUËY,  
Chief Administrator of Telegraphic line,  
Minister of the Interior.

To DR. BOUCHERIE."

**LOUISVILLE & FRANKFORT R. R.**—The Louisville Courier says:

We are gratified to announce that at a meeting of the newly elected Board of Directors of the Louisville and Frankfort Railroad on yesterday, Edward D. Hobbs, Esq., was unanimously re-elected President of the Company. Mr. Hobbs has served in that capacity during the preceding year, to the entire satisfaction of the public, the stockholders, and all parties interested in the success of this enterprise.

## "A CHRONOLOGY OF PAPER AND PAPER MAKING."

We find, in the Buffalo *Commercial Advertiser*, the following notice of a neat pamphlet of about sixty pages, just issued, for private circulation, by J. Munsell, Esq., of Albany, N. Y. Mr. Munsell is well known among printers as a practical printer of the first order, and his establishment is associated with many of our early recollections. During a long and prosperous business career, he has gathered a library of rare and choice works. His collection of works on the subject of printing is the most extensive one in this country, and probably in the world. From this, in leisure moments, he sometimes draws for the information of his friends. His work on Paper is of this character. But to the notice. The *Advertiser* says:

Mr. M., with the aid of his valuable and unique library, has condensed in his present brochure what might almost be deemed a compendious history of ancient and modern paper-making; beginning at the year 600 B. C., and informing us that "Manufactories of Egyptian paper from papyrus are supposed to have existed at Memphis. But papyrus manuscripts are found in the Catacombs, apparently several thousand years old." From this he traces down to 95 B. C., in which year it is mentioned by Du Halde, "that a Mandarin manufactured paper of the bark of different trees, of old rags, silks and hemp." We are also informed that paper-making was first introduced in France in 1340. The first paper mill in England is supposed to have been erected by John Tate, about 1498.

In 1714 a paper mill was erected upon Chester Creek, Delaware, and which is now in operation. The owner is a Mr. Wilcox, whose father made paper that was used in Franklin's printing office. The paper at this mill is still made by hand, pretty much by the same process used nearly a century and a half since.

The first paper mill in Massachusetts was erected at Milton, Mass., in 1730.

The first attempt to manufacture paper from straw was in Germany, in 1756, and was induced by the scarcity of rags.

James Whatman, the celebrated English paper maker, whose name is still connected with the best of drawing papers, commenced operations in 1760.

In 1770 there were forty paper mills in the States of Pennsylvania, New Jersey and Delaware, which were supposed to manufacture about £100,000 worth of paper annually.

In 1781 the scarcity of paper in New York was so great that the Journal of the second session of the Assembly was not printed, the printer being unable to procure the necessary paper.

In 1790 the practice of coloring paper blue had its origin in a paper-maker's wife accidentally dropping her "blue-bag" of powdered indigo into some pulp in a forward state of preparation.

The first paper mill erected in the northern part of New York was at Troy in 1793, by Messrs. Websters, Ensign & Seymour.

In 1804 the Messrs. Fourdrinier, of England, made such improvements upon Louis Robert's machine, that it has ever since gone by their name.

[The uninitiated may not understand that

the Fourdrinier machine carries the pulp upon a sort of endless belt, which is constantly vibrating, while the regular "cylinder machine" takes the pulp directly upon a cylinder.]

In 1805 the rice paper of the Chinese was introduced into England. This was not a manufactured article, as was generally supposed, but a vegetable production, cut spirally, and afterwards flattened by pressure.

In 1812 the number of paper mills was one hundred and ninety in the United States.

Of an edition of 30,000 copies of a Bible, published by the British and Foreign Bible Society, in 1818, it was supposed that not a perfect copy existed in 1834, all of them having fallen to pieces, owing to the process of excessive bleaching with chlorine in manufacturing the paper.

The first American Cylinder Machine was invented by Thomas Gilpin & Co., of Wilmington, Del., in 1817.

In 1828 it was estimated that the newspapers in New York consumed 15,000 reams per year; and that the whole newspapers in the United States required 104,000 reams, at a cost of about \$500,000.

[Three daily papers in New York can now be named, whose aggregate consumption of paper is over 60,000 reams per year, at a cost of about \$300,000 per annum.

In 1819 we find that straw paper was first introduced in general use.

In 1830 Thomas Gilpin obtained a patent for improvement in "calendering," or passing paper between cylinders.

In 1844 there were 600 paper mills in the United States, employing a capital of about \$16,000,000, manufacturing paper to at least the amount of capital, and affording maintenance to at least 50,000 persons.

In 1854 the Philadelphia *Ledger* printed its entire circulation upon a fabric of straw, and in the same year Geo. W. Beardsley, of Albany, made experiments in manufacturing paper from basswood, and produced very creditable specimens.

[Mr. Beardsley is still progressing in his experiments at Little Falls, in this State, with every prospect of final success.]

In 1855 there were 750 paper mills in the United States, producing paper which, at ten cents per pound would amount to about \$25,000,000.

In 1856 there were twenty paper mills at Lee, Mass., giving employment to over 1000 people, and manufacturing an amount equal to \$1,300,000 annually.

We have thus followed our friend Munsell very cursorily in his researches among the paper mills and paper makers. The precise epoch of the introduction of paper-making is probably veiled in obscurity. The interesting chronological analysis presented in the present work is worthy of extended circulation, and we hope the trade may ask for it.

**LARGE STEEL WORKS.**—One of the largest cast steel works in the world is that of F. Krupp, at Essen, Prussia. The Chamber of Commerce at Essen gives the following details. In the factory were at work last year (1855), 150 melting, cementing, and warming furnaces, 9 steam engines, 5 steam-hammers, 1 face-hammer, 1 tail-hammer, 34 smith's fires, 90 working machines, 800 workmen are employed, and the produce in 1855 was 4,500,000 lbs. of cast steel—whereas in 1854, only 1,700,000 lbs.; also 1,750,000 lbs. of wire produced.

Thos. Prosser & Son, of New York, are the American agents of this establishment.



**VERDICT ON THE LATE R. R. CATASTROPHE**—The Coroner's Inquest at Philadelphia inquiring into the causes of the late railroad slaughter have returned the following verdict:

1. The Inquest find that Rev. Daniel Sheridan, Edw. Hall, Elizabeth Gun, Thomas Kelly, Bernard Runnigan, Michael O'Brien, John Maguire, James Mc Intyre, Francis Walls, James Quigly, Catherine McGurk, John Scribbs, John Ryan, Hugh Campbell, James Rowlia, Mary McOrlain, Lawrence Dillon, and Henry Harris, died in the city of Philadelphia, from violence inflicted on Thursday, the 17 of July, near Camp Hill Station, on the North Pennsylvania R. R., within the county of Montgomery.

2. That such deaths resulted from the violent collision of two trains of locomotive engines and passengers belonging to and under the management of the said Company.

3. That the said collision was occasioned by the criminal negligence of Alfred Hoppel who as conductor, was in charge of the excursion train running from Philadelphia to Fort Washington, and who criminally and negligently ran his train beyond the siding at Edge Hill.

4. That the regulations of the North Pennsylvania R. R. Co. for the running of excursion trains are insufficient, especially in this, that there is no provision for special instructions to the conductors of the regular trains, when excursion trains are on the road.

5. That the said regulations are further defective in this, in permitting regular trains on a road of nineteen miles in length, to start at or near the time when excursion trains are expected to arrive.

6. That adequate provision is not made for the regulation and comparison of the watches used by Conductors and Engineers on the road.

The Inquest make these last three findings as the expression of their opinion, and as required by their duty to the public.

**PACIFIC R. R.—Southern Route.**—Hon. T Butler King addressed the citizens of Jackson Miss., on the evening of the 9 ult., on the subject of the Pacific Railroad, on the parallel of the 32d degree of latitude. When he concluded the following resolutions were unanimously adopted.

*Resolved*, That the thanks of this meeting be and are hereby tendered to the Hon. T. Butler King, for the able address he has just delivered upon the practicability and advantages of the proposed railroad to the Pacific through the State of Texas.

*Resolved*, That in the opinion of this meeting the proposed line of railway to the Pacific, through Texas, is the only practicable route for such road.

*Resolved*, That a committee of five be appointed by the chairman to ascertain all the facts in relation to said proposed line, showing its superior advantages over all others, and that said committee either by an address or some other means, make known these facts to the public of Mississippi.

In pursuance of the last resolution Messrs. George S. Yerger, Gov. McRea, Wirt Adams, D. C. Glenn, Geo. Fern, and Gen. Freeman, were appointed on the committee.

## SOUTHERN PACIFIC,

OR,

**Texas Western Railroad Co. Agency.**  
THE undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14. 106 West Fourth Street Cin.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many, yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                    |        |
|------------------------------------|--------|
| One Square, single insertion,..... | \$1 00 |
| " " per month,.....                | 3 00   |
| " " per annum,.....                | 20 00  |
| One column, single insertion,..... | 4 00   |
| " " per month,.....                | 10 00  |
| " " per annum,.....                | 60 00  |
| One page, single insertion,.....   | 10 00  |
| " " per month,.....                | 25 00  |
| " " per annum,.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, AUGUST 12, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR  
W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, - - - - - TUESDAY, AUGT. 12.

#### SHALL THE UNITED STATES OR MEXICO MAKE THE PACIFIC RAILROAD?

The Pacific Railroad bill was again given the go-by this morning, the House refusing to suspend the rules to allow the Committee to introduce its report, and have it referred to the Committee on the Whole. It will come up, however, before the session is over, and I think be passed.—*Wash. Correspondent.*

There is a view of this subject which we are confident has not been taken at Washington, and which is highly important to the middle and Northern States: it is, that the Texas Pacific Railroad *may* be made without the aid of the United States, while the road of the Middle and Northern States *cannot* be. The matter lies thus: we understand that there is distinct information that Mexico is willing to make a full and ample grant of land for the continuation of the Texas Pacific railroad, from El Paso to Guyamas, on the Gulf of California. If this be so, and we believe it is, it places the United States in a predicament, and especially those who are so strenuous for a Pacific road on the Middle and Northern routes. A railroad from the Ohio Valley, as this will be, *via* Shreveport, (La.) El Paso and Guyamas to the Pacific, will form a great commercial route, from the Atlantic to the Pacific, and it will carry the trade Southwardly instead of Northwardly. To go through the Gulf of California will, of course, be a greater distance round, but it will be a practical, efficient route. On the Gulf, the steam ships will run to any part of the Pacific. That this route may be easily and speedily constructed, will be readily admitted when our readers are informed in regard to some other matters. We have authentic information that the Texas legislature has passed the Loan Bill, which gives \$6,000 per mile to each railroad when graded for its superstructure. Six thousand dollars per mile, in money, and ten thousand acres of land per mile, will make the Texas Western railroad, and afford a surplus from Louisiana to El Paso. The Mexican grant and the subscription to the road will make it to Guyamas, and thus a great Southern Pacific road will be made by the liberality of Texas and Mexico, while the United States stand with folded arms and do nothing. The result will be that the

NO. 26.

great commercial cities of the Atlantic and the North will be thrown off the track entirely, and the North and Middle interests entirely neglected. To avoid this position of affairs, there must be immediate and decisive action on the part of Congress. It will not do to put this matter off two or three years, for then the Southern road will be in full and successful progress towards construction. There is no mistake in this, and we should advise those who have so long been striving for a railroad on the Iowa and Missouri routes to be up and at work. The Southern route can take care of itself, although it claims and should have a fair share in the aid given to the Pacific road. Let the friends of this great measure, then, insist on a speedy and efficient success. Let it be passed at once. Let all rivalries be done away with, and the work commenced and carried on efficiently. The suggestion we have made in reference to the Mexican route, is one the importance of which every discerning man can see at once. If, as we have supposed, Mexico stands ready to aid in a road from El Paso to Guyamas, then a Pacific road on the Northern route *cannot be made unless now provided for.*

#### LAND GRANTS FOR RAILROADS.

A correspondent of the Hamilton Spectator, in a somewhat lengthy article, attempts to disprove the policy of giving lands, in Canada, to railroad companies for the purpose of aiding in the construction of their roads. He opposes it on the grounds that the lands are too valuable. That the giving them to a railroad company withdraws them from market and thus puts a check upon emigration, and finally that this course creates large landed monopolies.

1st. The lands are too valuable. On this head he contends that the lands of Canada are more valuable than those of Illinois and attempts to prove it by the assertion that the lands of northern latitudes are better adapted to grains and grasses, and give *surer* crops. He qualifies his assertion by adding "within certain limits." We know of no better way of judging of these things than by comparing the stream of emigration that, has flowed to each locality. While the United States have been filling up under their liberal policy with a rapidity unprecedented, Canada has scarcely yet taken the initiative to that growth and development, which should be hers. Public lands, of however great intrinsic value, are worthless to a government because they produce no revenue. While those same lands, when alienated and settled, although no longer the property of government, are a source of constant profit, because their inhabitants share with others the burden of taxation to support the government.—We say then Canada will be enriched if she secures the early settlement of her lands by giving

away every acre of her public domain. Her borders will be filled, her fields be cultivated and her treasury supplied with the willing offerings of thousands, where now none live to pay a pittance.

The true policy of a government is to fill its domain with settlers.

2d. The writer states that giving land to railroads, represses emigration. This is absolutely untrue. Railroads by the terms of the grants are usually compelled to alienate their lands within a definite number of years, and neither they nor any other bodies of prudent men can afford to keep *dead capital.*

The truth is, railroads open up means of communication where otherwise it would be impossible for emigration to go. And they are as much better means of extending settlements than rivers as they are more *reliable* and less subject to the accidents of low water and freshets.

3d. The writer claims that they give rise to large landed monopolies. The fallacy of this argument is again shown by referring to the fact that railroad companies are usually compelled to alienate their lands within a fixed period. If an immense monopoly is feared, let the government limit the extent of possession of a single company to 100, 200, or 300 miles of road, as may seem to them most desirable. In this manner the power and influence of a single corporation may be held in balance and checked by another.

Railroad land grants are by no means the dangerous things that the writer in the Spectator would argue. And it will be well for Canada if by a judicious use of her now unoccupied, and therefore worthless lands, she can acquire the means of developing her resources and enriching her people.

NEWSPAPER RECORD.—Messrs. Lay & Bro. of this city and Philadelphia, have just issued from the press a handsome volume of 200 pages, under the above title. It contains the latest list of Newspapers and Periodicals published in the United States, Canadas and Great Britain, with a sketch of the early history of printing and newspapers.

Aside from its list of newspapers, alone of great value, the Newspaper Record contains much important and interesting intelligence, that every one should know. It is well worth a place in the library.

FRENCH RAILWAY TRAVELING.—Twelve years ago the number of travelers between Paris and the Belgian frontier amounted, perhaps, to 300,000 or 400,000 annually. In 1850 the northern Railroad conveyed already  $3\frac{1}{2}$  millions of travelers, whilst in the past year the number rose to no less than  $5\frac{1}{2}$  millions, which is equivalent to the sixth part of the whole French population. Of this number, 615,000 travellers rode in first-class carriages; 1,507,000 in second; and 2,126,000 in third-class.—*Baltimore Price-current.*



[From the Texas State Gazette.]

### THE CONDITION OF THE STATE OF TEXAS.

In the two preceding numbers we have examined the condition of all that part of the State comprised within what is commonly known as the sugar and cotton regions. We shall, in this number, examine more particularly the wheat region.

We may, as a general rule, define the wheat region of Texas as that portion of the State lying north of a line drawn east and west on the 30½ degree of north latitude, and north of the county of Travis.

The area of said portion of the State is estimated by Commissioner Crosby at 171,650 square miles, or 109,860,000 acres. In estimating the real productive powers of this region, we may cite a statement from the Patent Office Report for 1854, page 147. Here it is stated that the District composing the valley of the Susquehanna is 70 miles in length by 12 to 20 in width, or about 1120 square miles, and that the surplus of wheat produced is *one million of bushels*. Now as the table given below, from the census, places Pennsylvania and Texas on the same footing for the average amount raised per acre (15 bushels), it is but fair to estimate the capacity of our wheat producing region upon the same basis. The uncultivable land in the Susquehanna valley is also proportionably far greater than our wheat region. If, then, 1120 square miles in Pennsylvania produces a million of bushels surplus of wheat, 171,650 square miles in Texas would produce 153,267,857 bushels, or upwards of fifty-three millions of bushels more than actually produced in the whole United States in 1850, as may be seen by the annexed table. This, too, is allowing for consumption the same amount of wheat as in Pennsylvania, which would not be so great on account of the larger amount of corn consumed by our producers of wheat.

At the same time it is proper to say that in counties much further to the south—in, for instance, Victoria county, on the Guadalupe, and Fayette, on the Colorado, wheat has been raised successfully. In Bastrop the experiment has been tried this past season with great success.

Col. Dancy, of Fayette, has averaged as high as fifteen bushels to the acre in that county.

Wheat was formerly cultivated by the Mexicans in Bexar county. Mr. Maverick, one among its old citizens, and a member of the Senate, says that irrigation was used in its cultivation with great success. On the opposite side of the Rio Grande wheat is extensively cultivated.

El Paso county, we are informed by Mr. Crosby, furnishes United States posts both in New Mexico and Texas, with their supplies of flour. It is the chief crop of the county, and yields in greatest abundance. This county is over six hundred miles from the seat of Government.

Wheat is said to grow readily in almost every climate, from the torrid to the frigid zone. It is raised at Fort Liard, in the vicinity of the Rocky Mountains, 60 deg. north latitude, and it is raised also as far to the south as the river Nile in Egypt, but still there are certain localities in which it is less prolific, and a less reliable crop than others. In the Patent Office Report for 1853 there are three stations given by way of example—Cincinnati, Ohio; New Harmony, Indiana; and St. Louis, Missouri, embracing Southern Illinois, &c., being districts where the great-

est amount of rain falls on the western rivers. In these regions wheat is an unreliable crop. The main causes which contribute to this want of adaptation for wheat is the excess of humidity in the atmosphere; a low state of temperature has also a disastrous effect further north.

Wheat needs a dry and equable atmosphere, and no country in the Union would seem better adapted to its growth than northern Texas. The best northern wheat regions are classed by Commissioner Mason, of the Patent Office, as Rochester, New York; Gettysburg, Pa.; Cleveland, Ohio; and Milwaukee, Wisconsin. Now, in these several places the wheat is harvested about the early part of July, and the mean temperature of the harvest month ranges from 70 to 73; the first being the temperature of Milwaukee. In Texas the wheat ripens in May, and in this month the mean temperature at Fort Graham is given as 73 deg. The temperature during the month of ripening thus corresponds very nearly with the more favored wheat regions of the North; but the superior elevation of our country, and the dryness of the atmosphere, are exclusively the advantages incident to Texas.

There are two varieties of wheat which we may mention—the hard and soft. The soft wheats have an opaque coat or skin, and which when first cut, give way readily to the pressure of the finger and thumb. This is a northern wheat, and requires long drying before it can be ground into flour.

The hard wheat is a southern wheat, such as we raise in Texas. It is a compact seed, transparent, and when bitten through breaks short and shows a very white flour within.

The qualities of these wheats are different, and enter into the causes of their consumption by commerce. The soft wheat of the north contains the greatest quantity of starch, which fits it for vinous fermentation, by its conversion into sugar and alcohol, and it is therefore the best for brewing and distilling. The hard wheat contains the most gluten, a tough, viscid substance, which is very nutritious, and which, containing a portion of nitrogen, readily promotes that fermentation or rising, as it is called, of the dough, which is essential to good light bread.

The quantity of gluten varies from 5 per cent. in soft wheats to 30 per cent. in the hardest, or most transparent.

As an article of commerce, therefore, Southern wheat is in the greatest demand for bread. It is called stronger by the bakers, and is more sought after by them than any other kind. Owing to the larger amount of gluten, it is capable of being puffed up into the largest sized loaf, and thus commands a better sale.

The usual average of wheat is estimated at 60 to 65 lbs. per bushel; but we have been credibly informed by citizens of the wheat region of Texas that much of our wheat averages 70 to 74 lbs. per bushel.

We have made the following estimate of the amount raised in the State in 1855 and 1856. It will be noted that the increase is immense. We have subjected our estimates for 1856 to members representing the wheat region, and we believe that these are much below the real facts:

|                          | 1855.  | 1856.     |
|--------------------------|--------|-----------|
| Wheat product, bush..... | 41,738 | 1,433,212 |

We cannot better illustrate the rapid progress of Texas in the production of wheat than by comparing her position with other States. The following table gives the amount

of wheat raised by each State of the Union in 1850, as also the average crop per acre:

### BUSHELS OF WHEAT PRODUCED IN THE SEVERAL STATES.

| STATES AND TERRITORIES.    | 1850.       | Average per acre |
|----------------------------|-------------|------------------|
| Alabama.....               | 294,044     | 5                |
| Arkansas.....              | 199,639     | 10               |
| California.....            | 17,228      |                  |
| Columbia, District of..... | 17,370      |                  |
| Connecticut.....           | 41,762      |                  |
| Delaware.....              | 482,511     | 11               |
| Florida.....               | 1,027       | 15               |
| Georgia.....               | 1,038,534   | 5                |
| Illinois.....              | 9,414,575   | 11               |
| Indiana.....               | 6,214,458   | 12               |
| Iowa.....                  | 1,520,581   | 14               |
| Kentucky.....              | 2,142,822   | 8                |
| Louisiana.....             | 417         |                  |
| Maine.....                 | 296,259     | 10               |
| Maryland.....              | 4,494,680   | 13               |
| Massachusetts.....         | 31,211      | 16               |
| Michigan.....              | 4,925,889   | 10               |
| Mississippi.....           | 137,990     | 9                |
| Missouri.....              | 2,981,652   | 11               |
| New Hampshire.....         | 185,658     | 11               |
| New Jersey.....            | 1,601,191   | 11               |
| New York.....              | 13,121,498  | 12               |
| North Carolina.....        | 2,120,102   | 7                |
| Ohio.....                  | 14,487,351  | 12               |
| Pennsylvania.....          | 15,367,690  | 15               |
| Rhode Island.....          | 49          |                  |
| South Carolina.....        | 1,066,277   | 8                |
| Tennessee.....             | 1,619,366   | 7                |
| Texas.....                 | 41,729      | 15               |
| Vermont.....               | 535,955     | 13               |
| Virginia.....              | 11,212,616  | 7                |
| Wisconsin.....             | 4,286,131   | 14               |
| Territories.....           |             |                  |
| Minnesota.....             | 1,401       |                  |
| New Mexico.....            | 196,516     |                  |
| Oregon.....                | 211,943     |                  |
| Utah.....                  | 107,702     |                  |
| Total Bushels.....         | 100,485,844 |                  |

With the exception of Florida, it will be seen that the average of wheat produced to the acre is greater in Texas than in any other southern State. It far outrivals Alabama, Mississippi and Tennessee.

Now our crop in 1856 being one million four hundred and thirty-three thousand two hundred and twelve bushels, we stand next to where Iowa stood in 1850. By the same table it will be seen that Pennsylvania stands first on the list for the quantity of wheat produced. It exceeds fifteen millions of bushels. Ohio next, and New York next. These three States united raise forty-two millions of the one hundred millions of bushels raised in the whole Union; and yet, if we refer to the average of wheat raised to the acre, find Texas standing with Pennsylvania, and ahead of Ohio and New York. As a profitable crop, therefore, we have a right to predict an immense increase in the cultivation of wheat in Texas. Indeed, coming as it does at least one month earlier into market than either of those States, and being a more profitable wheat to bakers and large consumers of bread, the advantages in favor of its cultivation in Texas are superior to any northern State, and must give us the choice of market abroad.

It is, therefore, readily seen that our wheat product is a large and controlling interest in the State, and demands a liberal share of facilities of travel to market. What loss it is now sustaining may be estimated from the fact that the citizens of Collin are furnishing the United States Government at Fort Washita with flour at the low rate of \$2 75 per cwt., or about \$5 50 per barrel; while our last prices current from Galveston average this article at \$8 75 per brl., and at New Orleans \$8 00 per brl.; at Cincinnati \$6 50 per brl., and at St. Louis \$6 50 per brl., and at New York at \$7 50 per brl. The contractors for supplying Fort Washita have, we understand, bought wheat in Collin at 62½ cents per bush. The following paragraph from the *Frontier*



*Patriot*, of the 4th of July last, published in Lamar county, shows an equally low price in that region:

"New wheat is selling in this county for fifty cents per bushel and under. This is a clear loss to the farmers of one dollar per bushel on every bushel—all for the want of a railroad to reach a market. When will the people understand their own interest—a farmer who produces one thousand bushels of wheat, the amount of his loss would pay a large instalment on a very large amount of stock in a railroad. Some folks are wise, and some are otherwise."

Now, these are ruinous prices, and call loudly upon legislators to remove, as far as it is in their power, the great evil which is now and must continue to be the cause of it. We have before us several estimates, given in the report of the Commissioner of Patents, showing the cost of raising wheat, and it is proper to introduce one of them. The following is given by "Thomas F. Hicks, of Galloway, Knox county, Ohio." See Patent Report for 1854, page 145:

"The cost of producing an acre of wheat, including the rent, or value of the land for one year, may be estimated as follows:

|                                     |        |
|-------------------------------------|--------|
| Ploughing once.....                 | \$1 00 |
| Harrowing three times.....          | 70     |
| Cradling, Shocking and Housing..... | 2 00   |
| Threshing 20 bushels, at 7 cts..... | 1 14   |
| Conveyance to market.....           | 1 00   |
| Seed wheat, 1½ bushels, at \$1..... | 1 25   |
| Interest on land for one year.....  | 2 00   |

\$9 09

Let us see, then, the loss sustained at the present prices for wheat in Collin and Lamar counties.

Estimate the price of wheat at 50 cents per bushel, or 62½ cents, and what would these twenty bushels amount to? Why but to \$10 and \$12 50, or but 91 cents, and \$3 41 surplus per acre!

The average price per cwt. of flour in Galveston and Houston is about \$4 37½. At this rate the loss sustained by our interior farmers is about three dollars and a quarter per brl., and making allowance for higher prices in other parts of the wheat region, we still may set down the loss in the sale of this crop, for want of railroads, at half a million of dollars.

In this estimate we throw out El Paso, and such other counties as cannot be approached for some time by railroads.

When this great wheat region shall find an outlet upon our coast, the vast amount of wealth it must bring back to northern Texas, and the impetus which it must give to business in general, will change the whole social condition of our State. A railroad striking towards a region like this, is seeking no barren sceptre, nor can it possibly fail to be a productive investment. When for a moment we contemplate the character of our resources, and behold first our sugar region on the coast, next our vast cotton field, and lastly this gigantic wheat region, well may we look to the extension of a railroad to our most northern and western frontiers, running as it would through all these regions, as of the highest moment to the future destiny of our State, and calculated to diffuse over the whole of it a tide of gold which the mines of California or of El Dorado have never surpassed in all the glittering dreams of the one or the exciting realities of the other.

In our next we shall examine our resources for conducting a large external commerce.

**IRON MOUNTAIN R. R.**—The President has signed the bill granting right of way to this road in front of Jefferson Barracks.

**N. Y. CENTRAL R. R.**—This road has declared a dividend of four per cent. out of its net earnings for the past six months.

#### THE R. R. JOURNAL AND THE PACIFIC R. R.

The *Railroad Journal* in noticing at length the minority reports of the committee on the Pacific Railroad says:

Prior to all such questions is to be settled whether a road can be built or sustained on any route at a reasonable cost, considering the objects to be effected. This primary question is yet to be disposed of,—though it seems thus far to have mainly escaped attention. The problem of a railroad to the Pacific has been generally stated as follows—given the cost per mile of the roads in the States, and multiply this sum by the length of a railroad across the continent, and you obtain the cost of the latter.

Now as far as the cost and maintenance of a railroad across the continent is concerned, the analogies of other roads can afford very little evidence. All these were built through regions abounding in timber and water; possessing a fertile and cultivated soil affording abundant supplies of food, with any number of efficient and trained laborers always at command. Now against these conditions, there is upon all the routes that have been proposed a deficient supply of wood and water, wide belts of sterile soil, in some cases of many hundred miles in extent, which are utterly incapable of culture, from the absence of rain. Upon every route proposed, the road as it progresses must serve as a medium for conveyance not only for nearly all the materials used in construction, but for the subsistence of the workmen upon it. It cannot, as is the case with most of our long lines, be approached laterally. As we before stated we have no parallel case to serve us as a guide in this. The first, point therefore, to be settled is the *practicability* of the road. That it is possible no one will deny. By practicability we mean *expediency*—that is, the road should be worth in one way or another, either as a political or a commercial engine, all it is to cost. Unless the affirmative can be made out we should not attempt its construction.

The *Journal* has omitted one very essential feature of this road in the southern route and that is that the grading of those sterile belts is in reality nothing. That there are hundreds of miles on which the company will have only to lay the track. Nature has provided a surface to these sterile lands art need not improve for railroad purposes. This fact is mentioned in the report of Col. A. B. Gray to the Texas Western Railroad Company, and is confirmed by Major Heintzelman and others who have travelled over this region. This great source of expense, therefore, is reduced to a minimum.

Again, the southern route can be approached laterally. The Colorado river 260 miles from the Pacific ocean, at San Diego affords ample means of lateral approach. Construction parties may therefore begin operations at San Diego on the Pacific and run east. At Fort Yuma on the Colorado and run east and west, and in Texas where the road is already in the hands of efficient and energetic contractors. With ample means the road can be built in five years; and if built in the three sections proposed, each division will pay as it is constructed, because when two

hundred miles of railroad are constructed on the eastern and western ends of the road this route will form the shortest and best from the Atlantic States to California.

The *Journal* thus sums up its conclusion:

Notwithstanding the very grave difficulties in the way, we still think that the one road at least will ultimately be taken up by Congress. That body must reflect and carry out the will of the people. A railroad to the Pacific is looked upon as essential to the symmetry of our system, and as a commercial and political necessity. The age is one thoroughly imbued with ideas of physical progress, and will not rest contented without attempting what must be the master-piece of human achievement. It is regarded on all hands as a work eminently fit to be executed. The commercial results that are to flow from it, are pictured in the language of hyperbole, such as the imagination alone can give utterance to. All these impulses combined will in the end compel Government to undertake the work.

If Congress will ultimately do something, is it wise for that body to delay its action till restive and impatient California shall be estranged, till thousands more of the enterprising of our citizens shall have become victims of the Panama and other tropical fevers. Till European enterprises now projecting shall have absorbed the capital that must build this road, or till a foreign war shall teach us what we refuse to loan in peace, the vital importance of a Pacific Railroad to the preservation of our social, commercial, and national interests.

**PACIFIC RAIL ROAD**—A railroad to the Pacific Ocean is rapidly becoming a *necessity* to our government and our business interests. In case of a war with such a maritime power as Great Britain—and we have just been threatened with such a war,—it would cost the government to send men and supplies across the country over the present road, immense sums of money, perhaps to as large an amount as the entire cost of the proposed road itself. And such a road, by furnishing facilities for rapid travel, and transportation of light merchandise, would be of incalculable advantage to our whole country.

The prospects of securing the construction of this road at an early day, are becoming brighter; since public sentiment is so generally and rapidly growing favorable to it, that the leading politicians of all parties are compelled to take ground for it; and even the National Presidential nominating conventions of the different parties, have been induced out of respect to public sentiment to insert a plank in their platforms favorable to its speedy construction. In fact the idea is justly gaining ground in, as well as out of Congress, that scarcely any measure could be set on foot by the General Government, that would be of as much importance and value to the whole country and all its interests, as would the providing a way for securing the building at an early day of this road.—*Cass Co. (Ill.) Times.*

☞ The gold yield of California for the last four years has been \$196,444,694. That of Australia for the same period \$172,104,731.



[From the Harrison Flag.]

## TEXAS BRIGHT AND DARK SIDE.

NUMBER TWO.

Texas is bounded on the North by New Mexico and the Indian Territory, from the latter it is separated by Red River. On the East by the Indian Territory, Arkansas, and Louisiana, on the South by the Gulf of Mexico and the Rio Grande, which separates it from the Mexican provinces of New Leon, Coahuila, and Chihuahua—It lies between latitudes 26deg and 36deg 30min. North and 93 deg 30min and 106 deg West from Greenwich embracing an area of two hundred and thirty-seven thousand square miles, or about one hundred and fifty millions of acres.

This area is more than equal to the whole empire of France four times as large as als New England, and more than five times al large as the State of New York. Texas is in every respect a new State. During the first third of the present century, it was one of the dependencies of the vast Republic of Mexico. Under Mexican administration the whole upper country was hardly more than one magnificent wilderness. The indigenous wandering tribes of Indians and the vast herds of buffalo enjoyed without reservation the range of the prairie and the forest. Both the horde and the wild herd have disappeared before the hand of cultivation and now neither one or the other is seldom seen within the limits of the State, except occasional bands of marauding Indians on the western frontier.

For a long time the Gulf shore was all that was occupied by the Spanish race. The low parts bordering on the Gulf and the regions extending eastward along the frontiers of Louisiana and Arkansas were gradually peopled by Anglo Americans, who as soon as they felt their strength, threw of the yoke of Mexico. Twenty years ago they declared their independence, and the free annexation of the Lone Star Republic as one of the sovereign states of this glorious Union, dates from 1845.

The history of Texas is full of interest, in many instances outstripping the most thrilling tales of romance—but of this we have nothing to do at present—our object being to display some of the advantages of an early settlement in Texas, and more particularly along the parallel of 32 deg- North, or the line of the Texas Western R. R.—This brings us into Harrison County as the starting point of our observations—this county contains 1082 square miles and is drained on the South by the affluents of the Sabine river, which forms a part of its Southern boundary, and on the North by Little and Big Cypress rivers and the affluents of Ferry and Caddo Lakes—these streams are small but swift and durable and with the numerous springs which break out all over the country afford abundance of pure living water for every plantation—The surface of the country is gently undulating with, an easy slope to the South-east, is covered with a forest of pines, oaks, elms, hickories blackwalnuts and mulberries—along most of the larger streams and bayous are quantities of cypress timber valuable for building and fencing purposes—In fact the timber of this county will form a rich and valuable source of wealth as improvements progress.

Wild fruits of many kinds are found in great profusion. The wild plum with its thousand varieties ripening from the early part of May

to the middle of July, is valuable, and is now cultivated as a staple fruit of the season. The grape and mulberry are native to the soil and grow luxuriantly; indicating that Wine and, silk as well as cotton and tobacco, will in time become valuable staples—the dwarf plum bush which rarely exceeds thirty inches in height, bending under its weight of yellow and vermillion fruit, is really an interesting sight and quite a curiosity—the fruit is only valuable for hogs which gather it as it ripens and falls to the ground—the blackberry, dewberry, whortleberry, and gooseberry are common and plenty.

Many of the beautiful exotic flowers, vines and creepers, cultivated in the hot houses and gardens of the North and East, are here seen in their native wildness; some adorning the earth with grace and loveliness others climbing the tallest trees, and mingling the comeliness of Flora, with the rich foliage of the forest—another, seemingly endowed with a disposition different from most things in nature, covers with its close embrace the rugged face of desolation, and conceals beneath its rich and shining mantle, the ravages made by the hand of time—the wreck which the tempest has wrought—it clings to and beautifies the decaying trunk of the monarch of the woods, standing a ruin in the midst of verdure; in glittering and fanciful festoons it throws out its thousands of gaudy trumpet flowers as a coronal of beauty to fallen greatness.

The passion flower, in whose emblematic petals the devoted Catholic sees symbolized the passion and death of our Savior, here finds its native soil. The shrinking mimosa or sensitive plant an object of so much interest to the naturalist and philosopher, is also a native—and the traveler trampling over its drooping and apparently withered leaves, looks back in vain for the path his rude footsteps had marked out; not a vestige of the invasion remains, but all again is life and verdure. The honeysuckle, hyacinth, jonquil, and dafodil are thrown together in most admirable disorder, and with the wild weeds of the wilderness weave themselves into a carpet of rich and varied beauty. The rose “the queen of beauty” claims the latest, though not the least consideration in this extended notice of the wild flowers of the country—they are of many varieties, from the purest white to the deepest carnation—one only of these we can notice, and this one is perpetually blooming even through the long dry summer months, without the aid or interference of man, and seems to defy his art to introduce a rival to its own unparalleled beauty—the common wild rose is so luxuriant that it bursts spontaneously into blushing life, sometimes crowning the hoary rock with a blooming garland, and sometimes struggling with the matted weeds of the wilderness, yet ever finding its way to the open day that it may bask and smile with thankfulness to the bright sun without whose rays its cheek would know no beauty, and its bloom no fragrance—blooming in the barren waste this lovely flower is seen unfolding its fair leaves where there is no beauty to reflect its own, and thus calling back the heart of the weary traveler to thoughts of peace and joy, reminding him that the wilderness of human life, though rugged and barren to the discontented beholder, has also its sweet flowers, not the less welcome for being unlooked for, nor the less lovely for being cherished by a hand unseen.

\* \* \* \* \*

## PENOBSCOT &amp; KENNEBEC R. R.

We have been favored with a copy of the Annual Report of the officers of this company, and as it is the first made since the road was passed into the hands of the Directors in running order, it contains an interesting summary of cost and operations. The business done has not been very heavy. The Report does not give the length of road, gauge, or weight of rail. It is presumed that these were given in previous Reports, which we have not. The length of the road, as given in the Report of the Secretary of State, is 54 7-10 miles.

## The Report says:

The cost of construction of the road, as shown by the Treasurer, including the equipment account, amounted on the 31st of May, to.....\$1,723,408 61  
To which is to be added hereafter, for estimated expenditure..... 65,871 00  
\$1,789,279 61

This is a larger sum than was estimated before and at the commencement of the building of the road, and has arisen in part from the following expenditures not then anticipated, or largely in advance of the original estimates, viz:

|   |           |
|---|-----------|
| Allowance to Moor & Dunning, in addition to the contract, in Company Bonds..... | \$100,000 |
| Amount allowed to Moor & Dunning, by referees, more than the contract.....      | 46,378    |
| Land, depot, wharves, and filling at Bangor....                                 | 110,000   |
| Extra cost of rails, over amount paid by contractors.....                       | 94,000    |
| Excess of land damages.....   | 13,000    |
| Loss on 93,000 stock, transferred from contractors and sold.....                | 70,000    |
| Interest to stockholders.....   | 34,000    |
|   | \$467,176 |

The means of the company, as gathered from the Treasurer's Report, are as follows:

## DEBT.

|   |                |
|---|----------------|
| Capital Stock paid in.....  | \$539,585 00   |
| City of Bangor Bonds.....   | 800,000 00     |
| Company Bonds of August 1, 1855, redeemable in 15 years—authorized issue \$300,000 of which have been sold..... | 200,000 00     |
| Bills and accounts payable.....   | 417,796 25     |
| Balance of revenue account.....   | 31,758 72      |
| Balance of rent account.....  | 722 30         |
|   | \$1,989,862 37 |

## CREDIT.

|   |                |
|---|----------------|
| Construction account, including road bed, superstructure, masonry, bridges, station buildings, and excavation and filling cove in Bangor..... | \$1,267,515 71 |
| Engineering, including subscription expenses and general expense accounts....   | 40,150 34      |
| Land damages, for right of way, station grounds out of Bangor and incidentals.....  | 43,373 96      |
| Less amt charged to contractors, 10,000 00  | 33,373 96      |
| Station grounds at Bangor, including pier corporation and old burying ground lot..  | 61,495 80      |
| Equipment account.....  | 105,458 26     |
| Interest, coupon and brokerage accounts..   | 117,339 54     |
| Discount on sale of \$200,000 Company Bonds.....  | 25,000 00      |
| Balance to debit of Stock transferred to company by contractors, under award of referees.....   | 73,075 00      |
| Bonds of City of Bangor on hand.....  | 253,000 00     |
| Bills and accounts receivable.....  | 13,453 76      |
|   | \$1,989,862 37 |

The item of “Stock transferred to Company” will be credited with whatever sum is received from the sale of 133 shares now held by the company.



## CONSTRUCTION ACCOUNT.

The foregoing account shows the amount chargeable to construction account.....\$1,617,950 35  
Add equipment account..... 105,458 26

Amount chargeable to construction account

May 31.....\$1,723,408 61

There are on hand, as reported by the Superintendent, and belonging to revenue account:

Materials for repairs of rolling stock, when required, about.....\$1,000 00  
Wood..... 8,000 00  
Due from Post Office Department.. 1,964 71

\$10,964 71

There are outstanding claims against revenue account..... 1,873 88

## LIABILITIES.

The floating liabilities of the company, as per general account, exclusive of balances to credit of revenue and rent account, are.....\$417,796 35

## ASSETS.

Bills and accounts receivable.....\$13,453 76  
Bonds of the City of Bangor, unsold.....253,000 00

266,453 76

\$151,342 59

In addition to the above liabilities, the company will owe—

For unsettled land damages, estimated.....\$8,000 00

For filling wharf, &c., work in progress..... 7,000 00

Deficiencies in fence, estimated..... 5,000 00

Outstanding claims, about..... 9,000 00

Interests due to stockholders on assessments, payable in interest scrip, redeemable in 1860, about.. 34,000 00

Outstanding coupons on Company Bonds..... 2,871 00

This amount will be chargeable to construction account.....\$65,871 00

There are outstanding accounts against revenue account, before mentioned..... 1,873 88

67,744 88

Amount of floating liabilities, liquidated and estimated, after deducting assets, as above.....\$219,087 4

Against this amount of indebtedness the company have—

The 133 shares of transferred Stock;

The Material and Wood.....\$9,000 00

The amount due from Post Office Department. 1,964 71

Whatever sum may be collected from unpaid subscription to Stock, estimated..... 10,000 00

When the \$100,000 of Company Bonds are sold, the sum realized will pass from floating into funded debt; as also does the amount due to stockholders for interest.

The funded debt of the company will then be:

For City Scrip.....\$800,000 00

For Company Bonds..... 300,000 00

For Interest Scrip, about..... 34,000 00

\$1,134,000 00

The Certificates of Stock issued represent 5,123 shares.....\$512,800

The amount collected on shares, not paid in full 26,785

\$539,585

After deducting subscriptions not deemed collectable, the number of shares that will be paid and entitled to certificates, is estimated to be 375.....\$37,500

On which has been collected, as above..... 25,785

\$10,715

Of the subscriptions uncollected, in whole or in part, there is due on subscriptions obtained by the contractors, and transferred as relief subscription from the Stock subscribed for by them.....\$5,735

From this we see that at the date of the Report this company owned a road of 54 7-10 miles in length, costing in round numbers \$30,000 per mile. This is not an extravagant price, judging from the average cost of Eastern roads.

It now remains for its managers, by prudence and economy, to make it a profitable investment.

## THE GRAND TRUNK RAILWAY.

It has been our good fortune within the past few weeks, to pass over the line of the Grand Trunk Railway as far as Brockville, in Canada West, to witness the opening of the Line from Toronto west to Guelph and Berlin, and to examine the works in progress between Toronto and Brockville, as well as the Victoria Bridge. The line is to be opened from Brockville to Toronto the present season, and as far west as Stratford, one hundred miles west of Toronto, making a total mileage of 869 miles in operation the present year.

The bill granting aid to the company to the extent of *fifteen millions* of dollars, passed the Provincial Parliament, and received the royal assent on the 2d instant. The act in question allows the company to issue two millions sterling in preferential bonds, to take precedence of the government lien, and the government further agrees to pay the interest on their entire loan, for the term of *five* years, which loan now amounts to £3,111,500 sterling. The interest on this sum for five years reaches about one million sterling, which sum is to be represented by the company's stock. The aid, therefore granted the Grand Trunk Railway Company, by the act of July 2d, 1856, may be set down at *fifteen millions* of dollars.

Of the money thus granted, £800,000 sterling, or about \$4,000,000 is to be applied to the Victoria Bridge, £450,000 to extend the line to Sarnia, and £525,000 to the line below Quebec. The Province seems determined to carry out the entire scheme, as laid down in the prospectus of 1852, and to aid in addition, subsidiary lines at Prescott, Coburg and Port Hope.

It was gratifying to observe that during the long and exciting discussion on this matter, no one ever questioned the policy of purchasing the Atlantic and St. Lawrence R. R., though some doubted the propriety of paying the full cost of the line. The value of this link, in their vast system of public improvements, was generally and fully admitted, and the advantages of Portland Harbor, as the winter port of Canada, were repeatedly asserted in the debates.

This city therefore, is as deeply interested in the Grand Trunk Railway of Canada as any locality on its route, and the recent grant of aid will favorably affect its business.

All doubts as to the completion of the Victoria Bridge are now removed, and the work of building is now in rapid progress. With the company's engineer and Mr. Hodges, the agent of the contractors, we visited these works the present week, and saw the operation of sinking coffer dams and placing the foundations of the piers. Two piers are already finished, and seven more are in progress—two of them on the south side of the St. Lawrence and seven on the Montreal side. The northern abutment, 242 by 90, is raised above the water level, and the embankment, extending from it to the shore, 1200 feet, is already finished. The bridge will consist of 25 spans or spaces for navigation between the 24 pieces (exclusive of the two abutments) for the support of the tubes. The centre span will be 330 feet wide, and each of the other spans will be 242 feet wide. The width of each of the piers next to the abutments will be 15 feet, and the width of those approaching the two centre piers will be gradually increased, so that these two piers will each be 18 feet wide, or 3 feet more than

those next the abutments. Each pier is to be 90 feet long. The stone embankment leading from the south shore of the river to the south abutment will be 600 feet long. The length of the bridge from abutment to abutment, will be 8000 feet, and its total length from river bank to river bank will be 10,284 feet, or 176 feet less than 2 English miles.

The clear distance between the ordinary summer level of the St. Lawrence and the under surface of the centre tube is to be 60 feet, and the height diminishes towards either side, with a grade at the rate of 1 in 130 or 40 feet in the mile so that at the outer or river edge of each abutment the height is 36 feet above the summer level. The summer depth of the water in the St. Lawrence varies from 14 feet about the centre to 4 feet towards the banks, and the current runs at the site of the bridge at a rate varying from 7 to 10 miles an hour. The piers already built each contain about 6000 tons of masonry, and scarcely any one block contains less than seven tons weight.

By means of coffer dams an excavation is carried down to the rock bottom underlying the bed of the river, and the foundations bolted to the solid rock, found at depths varying from 14 to 18 feet below the surface of the water, in those already in. The placing of these foundations in the midst of a foaming cataract running at the rate of from 7 to 10 miles an hour, 18 feet below its surface, firmly bolting them to the solid rock so as to defy the mountains of ice that have heretofore swept away every opposing obstacle in the "shove" of a winter freshet, is the greatest work that has ever come to our knowledge, compared with which the Thames Tunnel seems an insignificant affair. Two of these piers and the northern abutments have stood the test of two winters, the ice rising to the top of each—the winter level of the river rising 17 feet above that of summer.

The coffer dams, the work and invention of Mr. Hodges, form immense wharves open in the centre, in the middle of the river, on which habitations are erected for the summer residence of the employees on the works. The works are well worth visiting as among the greatest achievements of modern science.

The building of the Victoria Bridge is the greatest work of modern times—one that is destined to affect the business relations of Canada and the Northern States more than any one enterprise of the day. Its completion is fixed for Jan. 1st, 1860.

We congratulate the friends of the Grand Trunk Railway on the auspicious prospects of their enterprise, now that all doubt of its success is taken away.—*State of Maine.*

CHICAGO, BURLINGTON AND QUINCY R. R.—The stockholders of the Chicago, Burlington and Quincy Railroad, as consolidated have elected the following named gentlemen as directors:—James Joy, of Detroit; Henry Ledyard, do; George F. Porter, do; John G. Bead, do.; John W. Brooks, of Boston; John Van Nortwick, of Batavia, Ill.; Isaac H. Burch, of Chicago, Ill.; W. Selden Gale, of Galesburg, Ill.; Chauncy S. Colton, do.; Silas Willard, do.; James Bunce, do.; W. J. Selden, do.; George W. Gale, do. At a meeting of the Board, James F. Joy was elected President, Amos T. Hall, Secretary and Treasurer, and Chas. C. Hammond, Superintendent.



W. D. Arnett's Patent, May 27th, 1856, for Detaching Oil Boxes from the Pedestal Jaws of Car Trucks.

FIGURE A

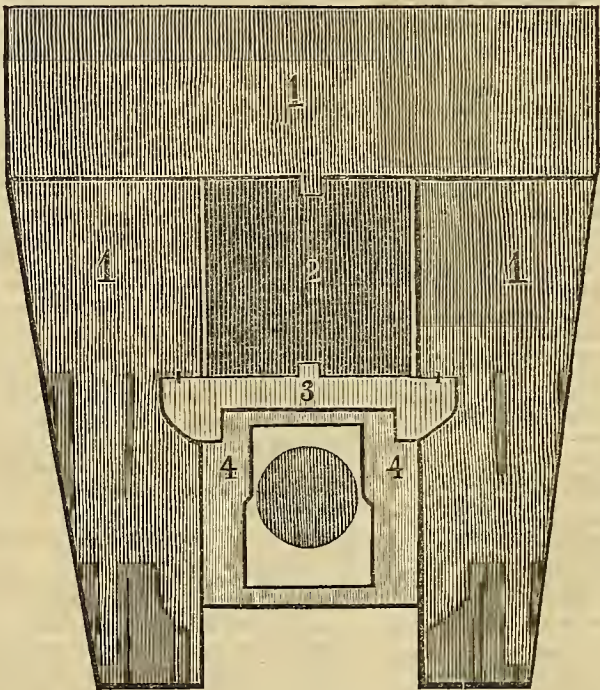


FIG. B

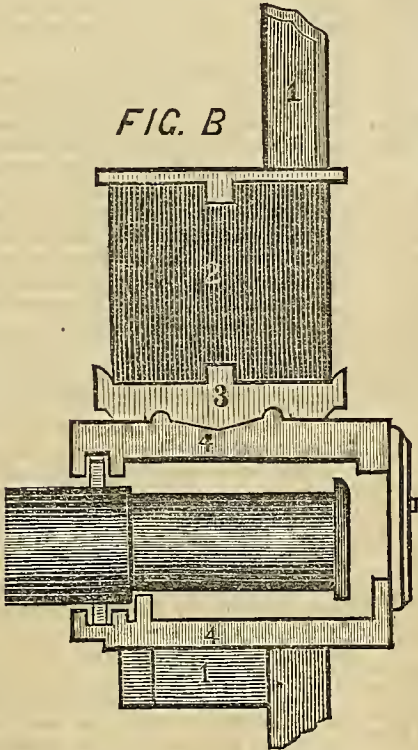
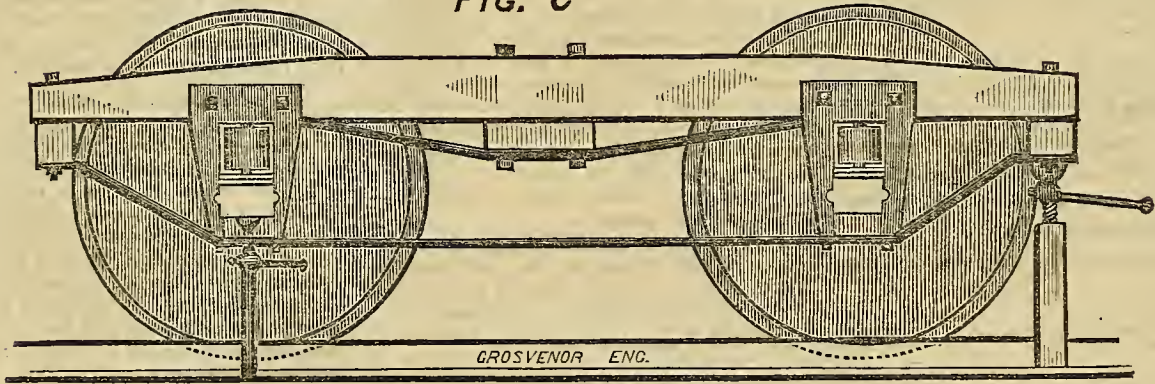


FIG. C



The object of this improvement is to afford a quick and easy method of removing oil boxes from the pedestal jaws of car trucks.

This process, it is well known, has heretofore been a tedious and expensive one, from the fact of its being often required to remove oil boxes for the purpose of repacking the rear end of the boxes to exclude the dust, retain the oil, and fit bearings to the journals &c

In the old methods to remove an oil box the truck had to be taken from under the car and the wheels from the truck, but by my improved plan a slight elevation of the corner of the truck, of one or two inches is all

that is required in removing and replacing the box. My patent consists of a novel construction of the oil box, and what I term a gum spring plate, furnished with lugs projecting in recesses down the sides of the box. The object is to secure the lateral strain.

A is a vertical section through the pedestal (1) Gum Spring (2) Gum Spring Plate (3) and oil box (4). Figure B is a transverse section showing the same parts seen in figure A, at right angles with that view. Figure C is a side elevation of the car truck showing at the right of the figure, the manner of raising the corner of the truck,

which allows the removal of the gum spring and the gum spring plate can then be raised and the oil box detached.

The entire operation to remove and replace the box need not exceed five minutes.

At the left of figure (C) is a jack-screw under the front end of the oil box for elevating it to remove and replace bearings, which is readily and easily performed without the use of a slide.

W. D. ARNETT.

Superintendent,  
Car Repair, L. M. R. R.



L. M. & C. & X. R. R. MACHINE SHOP,  
PENDELTON, Aug. 2, 1856. }

This may certify that W. D. Arnett's Patent Oil Box for car trucks has been applied, and is now in successful operation on this road. Its advantages consists in being easily removed and replaced, which must commend it to all railroad companies.

To all railroad companies desirous of obtaining a good oil box, we cheerfully recommend the above to their favorable notice.

RICHARD BROMLEY, M. M.

JOHN McVAT, Master Car Builder.

FULTON CAR WORKS,  
CINCINNATI, O., Aug. 2, 1856. }

W. D. ARNETT, Esq.—*Dear Sir:* We have examined your replacable Oil Box for car trucks, and pronounce it without hesitation decidedly superior to all other boxes in use. The rapidity with which it can be taken from the journal and replaced again, must certainly commend it to every railroad man.

KECK & HUBBARD.

CIN., HAM. & DAY. R. R. MACHINE SHOP,  
CINCINNATI, Aug. 4, 1856. }

This is to certify that I have examined W. D. Arnett's Patent Oil Box, for car trucks, in all its bearings, and consider it one of the best and most valuable improvements of the day, it being so constructed as to be removed at little or no expense. I take pleasure in recommending it to all railroad companies, as I am satisfied it will prove a great saving to all who may adopt it.

DANIEL McLAREN,  
M. M., C. H. & D. R. R. Co.

#### CLEANING OUT OF THE MAHMOUDIEH CANAL.

##### SPECIMEN OF THE PUBLIC WORKS OF EGYPT.

In the correspondence from Alexandria appearing in the various journals of Europe, it was recently announced that the Mahmoudieh Canal, which is nearly twenty leagues (fifty miles) long, had been cleaned out in the space of twenty-two days. The work commenced on the 10th of April, was finished by the 5th of May, and his Highness the Viceroy made the first journey upon it two days after in his dahalieh. We are enabled to furnish a few authentic particulars relative to this operation which, in point of rapidity, may be almost considered a marvel.

Towards the close of last February, his Highness the Viceroy made known his intention to have the canal cleaned out, it having never been thoroughly dredged since it was first constructed, in 1819. It was his desire that the interruption thus caused should not last longer than a month. M. Mougél Bey, one of the engineers of his Highness, drew up the necessary estimate, and found that to complete the work within that space would require the employment of 67,000 men, on the supposition that there were three millions of cubical metres of deposit to clear away, and that each man could remove one and a half cubical metres a day. His Highness, who personally superintended every detail of the requisite arrangements, issued orders in accordance, which were transmitted to the Moudirs (prefects), the Nazers (sub-prefects), and Scheiks-el-beled (mayors of villages). Each locality was to furnish its contingent, and it was understood that the men might withdraw home as soon as the portion of work assigned to them was completed; the sooner their task was accomplished, the sooner would

they be at liberty. This acted as a premium for the encouragement of activity, and as the harvest time was at hand—the end of April being the usual period for it, the natives felt the importance of making haste, and instead of sending the number of men asked for, the authorities dispatched almost twice as many—namely, 115,000. They were all men in their full vigor; there were no boys.

As each party came upon that portion of the ground to which they had been directed, they found posts and upright staffs planted out to mark the exact space to which they were to confine their labors, and the number of cubic metres they had to turn over. There was a shovel, or a pickaxe, according to the nature of the work, to every five men. One handled the tool, another filled the koups (a kind of basket, roughly fashioned out of palm leaves), and the remaining three carried the loads away, running at full speed. A considerable number of them were immersed up to their waists in water, a number of springs having been laid open in every direction, by the sides of the canal falling in over the greater part of its extent, the earth of which they are formed possessing little consistency, composed as it is of the Nile sediment, which constitutes the soil of the whole line of coast.

The work proceeded amidst shouts of merriment. The workmen vied with each other as to who should display the greatest activity, and they exerted themselves with all their might, amidst the sounds of musical instruments. Each province, each village had brought its band of musicians for gala days—the same who figure at every public ceremony, at the celebration of births, circumcisions and marriages, at the festivals of the santons, &c. When the engineers, or other persons in authority passed by, inspecting their progress, they were greeted on all sides by the customary salutation, "God preserve your days!" Every morning fresh biscuit was regularly distributed. This was the special portion of the expense borne by the government. In addition, markets were established at intervals, where the fellahs could obtain onions, nuts, dates, figs, cheese, eggs, &c. The whole scene presented the appearance of one continuous festival.

Thanks to the precaution taken by those in authority, and the good temper preserved by the workmen, no mortality occurred among so enormous a multitude, all sleeping under the canopy of heaven. The seven medical chiefs of the seven provinces assembled, were in attendance with their assistants, and devoted their skill and attention to the small number of men who required them. Some ground for apprehension existed, on account of the unfavorable state of things then prevailing, as numerous cases of typhus had broken out at Alexandria, and there were also some cases of cholera even. The wind of the desert, the Khamsin, had blown during part of the month of April. It was called to mind, moreover, that at the time when the canal was first excavated, several thousand men had perished—a catastrophe which, it is true, was caused by the neglect of proper precaution and foresight. There was still room to fear the outbreak of some unexpected epidemic, whatever amount of vigilance might be exercised. On this occasion, however, all passed off in the best possible manner, with hearty impulse, cheerfulness, and thorough success; the work was completed in perfect style and with scarcely any sacrifice. The Mahmoudieh is now quite a new canal; it has been cleaned out, widened

and deepened; the draught of water throughout the twenty leagues (fifty miles) averages from one metre fifty centimetres (4 ft. 11 in.) to five metres (16 ft. 4½ in.) At the low water line it is twenty-five metres (81 ft. 9¾ in.) in breadth, and forty when the Nile waters are at their highest.

By special order of the Viceroy, a carriage-road has been added to the original canal, ten metres (32 ft. 7¾ in.) broad, and formed of muddy deposit, dried and hardened in the sun. Near Atfe, at the mouth of the canal, there stood immediately in the line of this new road some four or five hundred huts, built a long time since. In one night the fellahs by whom they were inhabited pulled them all down, and the next morning they were replaced by a superb avenue, perfectly straight and level. This was the only occasion, it must be added, on which they were allowed to work at night, although in their zeal they frequently solicited permission to do so.

**WATER-PROOF CLOTHING.**—To those of our readers who desire to furnish their negroes with water-proof clothing, during the cotton-picking season, it will be interesting to know that twenty thousand tunics, now being prepared for the French army, are according to a recent statement of M. Payen, a chemist of some note, rendered water-proof by the aid of alum and sugar of lead, without the use of India-rubber or gutta-percha, or any other gums or oils. The process is very simple, and is claimed to render any species of tissue water-proof—Dissolve two pounds and a half of alum in four gallons of water; dissolve, also, in a separate vessel, the same weight of acetate of lead in the same quantity of water—When both are thoroughly dissolved mix the solutions together, and when the sulphate of lead resulting from this mixture has been precipitated to the bottom of the vessel in the form of powder, pour off the solution, and plunge into it the tissue to be rendered water-proof. Wash and rub it well during a few minutes, and hang it in the air to dry.—*Soil of the South.*

**TONICA AND PETERSBURG RAILROAD.**—WILLIAM S. MORGAN, principal Engineer, is now engaged in surveying a route for a proposed railroad from Tonica on the Illinois Central, by Metamora in Woodford county, to Petersburg, and thence to Jacksonville or some other point south of Petersburg. It is intended, we understand, to apply to the next session of the Legislature for a charter, authorizing the construction of a road upon said route. The people along the proposed line are manifesting a very commendable degree of energy and interest in reference to this enterprise.—*Cass County Times Ill.*

#### EXPEDITION TO THE SOURCES OF THE NILE.

In addition to the cutting of the Isthmus, another circumstance is now directing attention to Egypt, that land of ancient mysteries. Under the immediate protection, and at the expense of the Viceroy, a scientific exploration of the highest interest is about to be set on foot. Conducted by a young traveler—already known by his works, and inured to the fatigues and dangers of African travel—an expedition, composed of scientific men of various countries, is about to traverse the Soudan, and advance resolutely to the discovery of those sources of the Nile which have been so long the subject of the conjectures and re-searches of science. Fortified with the support and the influence of the Viceroy of Egypt in the countries of the Soudan, entrusted at the present time to the enlightened government of another son of Mehemet Ali, Prince Halim, this expedition is



destined to solve the great problem of ancient and modern geography, if, indeed, it is to be solved at all. We have taken our measures to keep the public duly informed of the progress and incidents of this noble-spirited exploration, the discoveries arising from which will turn to the advantage, at the same time, of science and commerce, and will favor the impulse which the cutting of the Isthmus of Suez is destined to communicate to the relations between Europe and the interior of Africa.—*The Railway Times*.

#### SOUTH WESTERN R. R. ALA.

The President of this road recently addressed the following circular to its stockholders through the *Sparta Times*.

*Mr Editor* :—You will please give notice in your paper, that the annual meeting of the stockholders in the Southwestern R. R. Co, will take place at Cookville, Putman county on the 2d Monday in August, it being the 11th day of said month, for the purpose of electing a board of directors in said company for the ensuing year.

If the enterprise has friends, they should rally promptly to its aid between this and the annual meeting, as its fate will be finally cast for weal or woe at that time.

We are not disposed longer to flatter the public that they desire the construction of this road, unless they immediately prove their "faith by their works."

If farmers and money holders refuse to act under the resolutions of the Board passed at this meeting, the sincerity of their pretensions will be sufficiently attested and they will not act "though one rose from the dead."

Respectfully,

T. F. BATES, Pres't.

We like one thing about this letter. It is plain, open and honest.

If the people on the line and at the termini of this road desire its accomplishment, let them come forward and furnish the means.

#### BUFFALO & NEW YORK CITY RAILROAD.

—At a meeting of stockholders of the Buffalo & New York City Railroad, held in Warsaw a few days ago, the following named gentlemen were elected Directors: James Moore, John Wilkeson, Aaron Rumsey, Asa D. Wood, Augustus Frank, Samuel Swain, R. H. Heywood, George R. Babcock, H. S. Cutting, John A. McElwain, John B. Halstead, Horace Hunt, Samuel Hallet.

At a meeting of the Board of Directors, subsequently held, the following officers were duly elected: James Moore, Esq., President; Augustus Frank, Vice President; Geo. Colt, Jr., Secretary and Treasurer; Chauncey Tucker, Esq., Attorney.

McMINNVILLE & MANCHESTER R. R.—The cars are now running on this road over more than half its length, and it was expected to be opened to Marion Depot by the 1st of August.

LOUISVILLE & FRANKFORT R. R.—The *Louisville Courier* says:

We are gratified to announce that at a meeting of the newly elected Board of Directors of the Louisville and Frankfort Railroad on yesterday, Edward D. Hobbs, Esq., was unanimously re-elected President of the Company. Mr. Hobbs has served in that capacity during the preceding year, to the entire satisfaction of the public, the stockholders, and all parties interested in the success of this enterprise.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 60 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, AUGUST 19, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, AUGT. 19.

#### THE PACIFIC ROUTE AND CONGRESS—THE MEXICAN ROUTE.

The proceedings of Congress show us, that that body will do nothing for the Pacific road at this session. This we regret, and the nation will regret. For, the people unquestionably looked to Congress for some positive and substantial action. We were informed that the select committee were ready to report several weeks since, and had prepared such a bill, as we believe would have been acceptable to the country. This measure was based on the idea of a conciliatory compromise, among the friends of rival routes; and the construction of the road by the use of a portion of the public lands. That this was a wise and judicious plan is very evident. It required no money, and as the public lands granted are at present of little value; the reaction of the road on adjoining lands, in increasing their value, would have returned to the government ten-fold the nominal cost. Besides, it would be the means of introducing an immense capital into the interior of the country, on the basis of a vast land grant, with the certainty that the money would be applied to improving it—large loans could undoubtedly be obtained in Europe, which would be expended beyond the Mississippi. The lands of the government would rise; the resources of that region be developed; commerce carried into the interior of the continent; and unnumbered blessings flow to the whole country. All this has been postponed, if not rejected. We say, this is a matter of deep regret, and will unquestionably be lamented, by a large portion of the people.

There is a view of this subject now to be taken, which may prove more interesting to the Northern friends of the measure, than they imagine. It is this, that it is quite possible to complete a Pacific Road on the Southern route, without aid from the United States. We have mentioned this before. But it is a project, which should be reflected on; before the people are surprised, (as they will be), with the new phase of the subject. We understand, that negotiations are now on foot, to procure the aid of Mexico, for a continu-

ation of the Texas Southern Road, from El Paso to Guaymas, on the Gulf of Mexico. We learn, that this place is likely to be successful, and that Mexico will grant a great body of lands for this purpose. This land may seem comparatively worthless, in the hands of Mexicans; but in the hands of Americans it would be quite another thing. A large portion of the country is full of valuable mines, which have been unworked, from the effeminacy of the Mexicans, and the danger of the Indians. This country could soon make the road. The valuable grants of Texas, in land and money, judiciously employed, will make the road there; so that it is quite possible and very probable, that a Pacific Road, by the aid of Texas, Mexico, and individuals will be made, from Mississippi to Guaymas. The effect of such a scheme successfully initiated would be to alienate the Southern support from any other route, and Congress would be unable to pass any bill. The result of that would be, that no other road would be made, than that on the Southern route. For private capital cannot be obtained to make a road to the Pacific. The Southern Pacific Road, thus left, as a single route in a mild climate and easily run, would probably be a very profitable route, and then the Texas Route would be entirely successful. In this view of the case, perhaps the friends of the Texas route will not be very sorry that Congress had not acted. A little more delay, and they will have the field to themselves.

#### WEARY OF WELL DOING.

We regret to learn from the following letter, that a gentleman who has done noble service for the cause of Railroads in New Jersey, and more, perhaps, than any other man to make known the resources of that State, has grown weary of discouragements from those he sought to benefit. But we trust our correspondent will not yet give up. No great or good thing was ever done without a world of trouble and disappointment, and it is those that persevere to the end that reap the reward—

"Please stop my *Railroad Record*. If there is anything remaining unpaid, I will remit it on the receipt of the bill. I consider the *Record* an excellent paper, well conducted and valuable to all who are interested in Railroad matters, either as holders of Bonds, Stocks, or otherwise. But I have no personal interest in them. During my seat in the Legislature for three years past, I endeavored to get bills passed giving the people permission to build Railroads where the public good required, by making compensation for all damages sustained, either by persons or corporations, but did not succeed. I have now returned to my former

business of farming and surveying, but should I meet with anything of general interest to Railroad men, it would afford me pleasure to furnish to you, for circulation in your valuable paper. Very respectfully from your friend.

\*\*\*\*

#### PUBLIC WORKS OF INTERNAL IMPROVEMENT.

It is quite remarkable to see the very rapid progress of the United States in works called "Internal Improvements." This progress far exceeds even that of population. We have before us a table of Internal Improvements for the year 1830, prepared for the first volume of the American Almanac. One thing will strike the reader with astonishment—that the only works of this kind then recorded were Canals. Even Turnpikes were omitted, and Railroads were not even mentioned—not one being in existence. That our readers may be able to review this subject, we give the following statement of the works then in existence:

|                           | Miles. |             |
|---------------------------|--------|-------------|
| 1. Middlesex Canal, Mass. | 29½    |             |
| 2. Blackstone do do       | 45     |             |
| 3. Farmington do Conn.    | 37     | unfinished. |
| 4. Erie do N. Y.          | 360    |             |
| 5. Champlain do do        | 63     |             |
| 6. Oswego do do           | 35     |             |
| 7. Seneca do do           | 20     |             |
| 8. Delaware & Hud. do     | 65     |             |
| 9. Morris Canal, N. J.    | 86     | unfinished. |
| 10. Ches. & Del. do Del.  | 14     |             |
| 11. Ft. Deposit do Md.    | 10     |             |
| 12. Ches. & Ohio do do    | 153    | unfinished. |
| 13. Ohio do Ohio          | 306    | do          |
| 14. Miami do do           | 60     |             |
| 15. Lehigh do Penn.       | 46     | unfinished. |
| 16. Little Schuylkill do  | 25     |             |
| 17. Conestoga Canal, do   | 13     |             |
| 18. Schuylkill do do      | 108    |             |
| 19. Union do do           | 79     |             |
| 20. Penna. do do          | 296    |             |

Aggregate.....1,898½

Less than 2,000 miles of Canals, no Railroads, and but few Turnpikes, was the whole amount of Public Improvements in the United States in 1830. The cost of the whole was less than a *hundred millions*, and that was deemed enormous. In order to compare this with the present state of things, we present the following list of improvements, as far as we now have the data before us:

|                                     | Miles. |
|-------------------------------------|--------|
| Canals, as above                    | 1,900  |
| Wabash and Erie, Ind.               | 350    |
| Miami Canal continued, Ohio         | 160    |
| Illinois Canal, Ill.                | 300    |
| Hocking, Wolhonding & Muskingum, O. | 100    |
| Chemung, Genesee, &c., N. Y.        | 150    |
| Pittsburg and Erie, Penn.           | 90     |

|                 |        |
|-----------------|--------|
| Aggregate       | 3,050  |
| Railroads       | 23,000 |
| Telegraph Lines | 20,000 |

The aggregate cost of these Improvements, at the present time, amounts to the following sums, viz:

|            |               |
|------------|---------------|
| Canals     | \$150,000,000 |
| Railroads  | 700,000,000   |
| Telegraphs | 20,000,000    |

Aggregate cost.....\$870,000,000

In 1830 there were but 2,000 miles of Ca-



nal or Railroad; but in 1856 there are 26,000 miles. The increase in length is thirteen fold, and in cost eight fold. But in that time the increase of population is but one fold.—We see in this, however, but the legitimate effect of natural and social causes. In the growth of a nation population must grow to a certain point before there is much accumulation of public industry; and this accumulation of industry must take place before there can be a great development of public works.—Looking to this progress in the past, and the natural and necessary effects of social laws, acting on the progress of society, we may, without the spirit of prophecy, determine something of the course of Public Improvement in the future. We know, for example, that the useful must precede the ornamental. Hence, we may safely conclude that the construction of Railroads, Bridges, Ocean Ships, and whatever conduces to commerce and wealth will chiefly engross the surplus labor and capital of the nation for yet many years to come; but when these are in the main accomplished, the more ornamental works of splendid architecture, of vast aqueducts, of public gardens, of parks and walks for the people, will also come. This will especially be the case, since it is probable that public war will hereafter engage but little of public attention. War is now too scientific; too much a mere game which may be exactly calculated, to permit the hap-hazard handling of it in the manner of the past. It is no longer possible for Alexanders or Cæsars to usurp the power of nations, and wield it for mere purposes of personal ambition. Nations think—and when they think they will rarely choose war. Hence Public Works, in all forms, from the useful to the beautiful, will engage largely the attention of mankind. In a Republic like the United States, full of free and fresh developments, this will be more necessarily the case. Railroads will be made with rapidity—especially in the West—till the present number is quadrupled. Our ocean ships, vast and magnificent as they now are, will be increased in size, strength and velocity, till the Atlantic is crossed in six days. Then magnificent halls of justice and legislation, grand cathedrals, temples of art and beauty, magnificent libraries—all that can grace and adorn the Republic, will arise, and excel all the glorious works of antiquity.

#### THE CROPS AND THEIR RESULTS IN 1856.

This is an interesting subject, for when winter comes people must eat; but the fields do not produce. We are constantly making a great mistake as to the crops in this country. We suppose, as it is largely an agricultural country, that it must necessarily have large surpluses for exportation; but it must be remembered that, agricultural as we are, our civic, or town population increases the fastest; that we have three hundred thousand able-

bodied men engaged on railroads; and that we have an annual importation of foreigners, who must eat at least one year without producing. The result of these facts is, that we produce less and consume more than is usually supposed. We have a surplus most years, as our exportations show; but this exportation shows also another fact, that the moment the ordinary exportation is increased, the prices at home begin to rise so rapidly that the domestic market is more profitable than the foreign. This we have seen in the last two years, and such must be the fact for many years to come. Hence the state of the crops become a matter of great importance to the general commercial markets, as well as those of consumption.

In the year 1855 the crops of the United States were generally very good—especially in all the cereals. Wheat, corn, oats were all remarkably good; so much so that there is undoubtedly a large amount of corn remaining over. Wheat was a good crop, but there is but little surplus in the country, from the fact that the granaries were all completely empty before the crop came in. Of the capacity of this country to produce grain (were that only in question) we have a striking example before us, in the returns of the counties of Ross and Pickaway, Ohio. The general result in these counties was as follows:

|                    |                    |
|--------------------|--------------------|
| Corn produced..... | 7,300,000 bushels. |
| Wheat do .....     | 800,000 do         |

The population is about 60,000, so that the production is 91 bushels of corn and 13 bushels of wheat to each person! The surplus grain in these two counties was at least three-fourths the whole production! But these are extraordinary counties, and we must now turn to the contrast this year. In regard to corn, we doubt whether the crop will be half that of last year!

This brings us to the prospects of the present crop. We think it may be perfectly relied on that the corn crop of this year (the corn crop never fails) will not be more than half that of last; but last year's crop was much above the average, and there is a large amount of surplus corn on hand. There will, therefore, be no real want of corn.

Again, we consider it clearly settled that the crops of oats and hay are short to a considerable extent. The result is that the supply of food for animals in the winter will be short—at least more so than usual. How far this will affect the pork and beef market we do not know; but we think it beyond doubt that the price of corn, oats and hay will be higher than usual.

The wheat crop of this year was generally good, and there will be a sufficient supply of bread.

The potato crop we fear will be short; not because enough was not put in—for there was a great breadth of land this year planted—but in most places they are sprouting, and will decay early.

Many persons, we are aware, will take a very different view of this subject from what we have done, but we believe this is a correct one, and that the crops, as a whole, will be found short this year.

#### OUR MANUFACTURES—SAFES.

We promised a short time ago some articles on the manufactures of our city. The gross amount of these, as well as our commerce, we gave in the last annual report of the Chamber of Commerce. We shall endeavor now to give a more detailed description of the articles and their mode of manufacture.

A strong box to keep treasure and other valuable articles is a time honored thing.—But the Safe of the present day is far different from the old iron-bound oaken treasure chests of a century back. These, to be safe, must necessarily be put into a safe place and protected from the accidents of fire. While the modern strong box is in itself a protection both from robbers and accident. Indestructible by fire, and proof against the skill of the burglar. The old treasure chests were to be found only in the houses of the very wealthy while a modern Safe is owned by every man who makes any pretension to business.

There are several large establishments in various parts of the country devoted exclusively to the manufacture of these articles. Among them, those of Cincinnati stand deservedly high. We have two establishments devoted to this speciality—besides a number of others where vault work and doors are made extensively. Our readers will get a tolerable idea of the business from a description of the establishment of Messrs. HALL, DODDS & Co. Their warehouse is located at 39 Second street, and is in itself a large establishment. The manufactory is on Elm street, between Front and Second, and occupies a lot 79 feet wide by 250 feet deep. The lot is mostly covered with a three story brick building. It contains a foundry, pattern shop, blacksmith shop, shop for preparing the iron and putting together the various parts, filling room, where the non-conducting substance is filled into the sides of the Safe, cabinet room for fitting up the shelves and drawers, painting and varnishing rooms and a ware room.

The outer shell of the Safe is made of plates of rolled iron, riveted together with heavy bands or frame work, making the appearance of panels. The iron plates are first hammered under a trip hammer to take out the buckle, and give them more solidity. They are then cut to the size and fitted and riveted in place. The door frame and jaws into which the door shuts are made of cast iron. The inner shell is made by most manufacturers of wood, but in HALL, DODDS & Co.'s Safes, it is made of plate iron. The Safe, therefore, as it stands now, consists of two strong iron boxes, one standing inside the other, with a space of about six inches left between the sides of the two. The Safe in this condition is now taken into the filling room. Here the space between the two iron boxes is filled with a composition, made chiefly of Hydraulic cement. It is this filling which gives



the principal value to the article. The composition used by some makers is mainly Plaster of Paris, which attracts moisture from the air, and effloresces through the joints, and also keeps the interior of the Safe always damp. There is also another serious objection to the old plaster filling still used by some makers—it is not reliable in a fire.

The point of filling is the most important point about a Safe. If the filling is bad, the Safe is worthless for its main use—protection against fire. If the filling is good, and the lock bad, it is a very easy thing to put in a new lock. But to put in new filling is entirely different. We were told by the Secretary of the DURYEE & FORSYTH MANUFACTURING COMPANY of Rochester, that they had had five thousand dollars worth of Safes returned to them on account of defective filling by the old firm of Duryee & Forsyth. For some reason the filling had expanded and burst the outer shell of the Safes. We have never yet heard of a single case of this kind in Safes filled by the composition used by HALL, DODDS & Co., and for which they hold a patent. The filling is conceded by makers to be the best in use. It is, therefore with no little pride that we point to our Cincinnati Safes as the best made.

The finishing of the Safe after it is filled is a matter in which the taste of the artist can find ample employment. The bright, beautiful, and polished Safe presents a very different appearance from the shell as we first see it standing in the shop. Its whole frame has been subjected to the operation of the emery wheel and the polisher, and finally paint and varnish has put the final touch to the finish.

The establishment of HALL, DODDS & Co. is capable of turning out 50 Safes a week. They usually aim to keep on hand about 200 Safes of various sizes and prices. The largest now in their warehouse, is a Safe 6 feet 10 inches high, 5 feet 5 inches wide, and 3 feet deep. It was made for a Jewelry establishment in New Orleans, and is waiting shipment. It is a most magnificent piece of workmanship, and is a little warehouse in itself. One the latest improvements in Safe making is the *Steamboat Safe*, manufactured by this house. In these days, when valuable property, if lost in vessels, is sure to be rescued from its watery bed, it is a great desideratum to get an *air-tight* Safe. Such a one is now made, and combines safety with perfect adaptability to the use for which it is intended.

The value of the Safe business to this city may be easily estimated. The cost of Safes varies from \$18 to \$2,500. Let us suppose \$300 to be a fair average, and that 2,000 Safes are sold in this city every year, we shall then have an annual sale of about six hundred thousand dollars. And this is but one of the many streams of business that annually pours its tribute into our city.

**ACKNOWLEDGEMENTS.**—We are indebted to Hon. Geo. E. Pugh for a valuable map of Central America. Our Government does much by its publication towards the spread of information, such as ought to be before the public.

#### REPORT ON THE PACIFIC R. R.

*The Select Committee to whom was referred the bill to provide for the establishment of railroad and telegraphic communication between the Atlantic States and the Pacific Ocean, and for other purposes, beg leave to make the following report:*

The necessity that exists for constructing lines of railroad and telegraphic communication between the Atlantic and Pacific coasts of this continent is no longer a question for argument: it is conceded by every one. In order to maintain our present position on the Pacific, we must have some more speedy and direct means of intercourse than is at present afforded by the route through the possessions of a foreign power.

The importance of our Pacific possessions is felt in every pursuit and in every relation of life. The gold of California has furnished the merchant and trader with a capital by which enterprises have been undertaken and accomplished which were before deemed impracticable. Our commercial marine has been nearly doubled since 1848; internal improvements have been pushed forward with astonishing rapidity; the value of every kind of property has been doubled; and the evidences of prosperity and thrift are everywhere to be seen. The security and protection of that country from whence have emanated nearly all these satisfactory results, is of the greatest importance; and that can be accomplished only by direct and easy communications through our own territories. Railroads will effect this. At present, we are forced to resort to a very circuitous route by sea, through the tropics and across the continent, at the most sickly point in the torrid zone. Should a war break out between our country and any other maritime nation, or should a difficulty arise with one of the petty Spanish-American States through which these routes lie, our communications would be interrupted, and the unity of our confederacy actually broken up.

Looking to these facts alone to secure the construction of these lines of communication, has given to them such an importance as never attached to any work of internal improvements since the time when, during President Jefferson's administration, it was thought necessary to connect the States lying on the Atlantic sea-board with the States lying in the valley of the Mississippi, by means of roads across the Alleghany mountains. Insignificant as such an undertaking as the building of a wagon road across the Alleghanies may appear now, the proposition was then deemed exceedingly difficult and occupied quite as much of the public attention as the Pacific Railroad does at the present time. The States were then separated only by the mountain range of the Alleghanies, but the western country was so remote, and access to it so difficult, that the construction of a road was considered absolutely necessary, and sufficient to authorize the earnest attention of Congress. The people of the western frontier were at that time exposed to frequent incursions of the Indians. The country was exceedingly fertile, but the markets were so distant that the productions were an incumbrance rather than a profit to the farmer, and vast tracts of rich agricultural lands were suffered to remain an unbroken waste. The action of the government attracted public attention, and awakened private enterprise. Canals were projected, and then followed railroads, until every part of that country, which was but a few years ago

called the "far west," has been brought within three or four days' communication with the cities on the sea-board, giving a new impulse to commerce, increasing the value of property, and relieving the frontiers from all the dangers of a hostile foe. No better example can be given of the benefits resulting from the construction of railroads, to both public and private property, than that of the Illinois Central Railroad. On the line of that road the public lands had been offered for sale many years without finding a purchaser, and were at last reduced to the lowest minimum price, twelve and a half cents per acre. Even this reduction was not sufficient to induce their sale; but after the government had given away one-half to assist in building the road, the other half was very readily sold for two dollars and fifty cents per acre. Similar results have followed the building of nearly every other railroad in the country, although in many instances, as in this, the roads came in direct competition with river and canal transportation.

A railroad across the continent would open up a vast extent of country to settlement, and much of what is now believed to be sterile and barren will, no doubt, (as in California) be found to yield bountifully to the agriculturist.

These lands are now totally without value, no matter how fertile they maybe, and to the government worthless. By giving away one half for the construction of the proposed roads, the government will thereby attach a value to the remainder; and whatever that value may be, will be the amount the government is gainer by the transaction. Your committee have not thought proper to step aside from the long established system of the government in granting lands only to aid in the construction of the roads under consideration, except incidentally, in the payment for transportation of troops, munitions of war, &c., and for carrying the mails; at the same time they have endeavored to extend to every portion of the country an equal share of the benefits to be derived from it. Every part for the country, extending from Lake Superior to the Gulf of Mexico, is brought in direct contact with one or the other of the proposed roads, and from the western frontiers of the States lying west of the Mississippi, connexions are easily made with roads already completed to the cities on the Atlantic seaboard.

By thus combining all the great interests of the country, an effort has been made to allay sectional jealousies and to bind together more firmly every part of the country.

The policy of granting lands, or the proceeds of the sales thereof, for the purposes of internal improvements, and to increase the value of the public property, was early adopted by our government. By the act of April 30, 1802, one twentieth of the net proceeds of the sales of the public lands lying within the State of Ohio was set apart to "be applied to the laying out and making public roads, leading from the navigable waters emptying into the Atlantic to the Ohio, to the said State and through the same; such roads to be laid out under the authority of Congress, with the consent of the several States through which the road shall pass." By the act of May 1, 1802, it is provided "that it shall and may be lawful for the Secretary of the Treasury to cause to be viewed, marked, and opened, such roads within the territory north-west of the Ohio, as, in his opinion, may best serve to promote the sales of the public lands in future." Both



these acts were approved by Mr. Jefferson, and form the basis on which all similar acts have been predicated. Every Executive since that time approved of similar acts, and the only change made was in the manner of making the grant, the lands having been given instead of the net proceeds of the sales thereof. The plan thus proposed precludes the necessity of entering into an estimate of the expense to be incurred in constructing any of the proposed roads. Nor does it matter how many roads are thus authorized to be constructed. If built, they will open up a vast extent of country to settlement, and thus the government and the people will be mutually benefited. If the roads should not be built within the time specified, the lands revert to the government, and the parties take nothing by the grant. Nothing is given without a corresponding benefit is to accrue.

As a means of military defense, the Secretary of War, in his last annual report, has placed this measure in such a strong point of view that your committee have thought proper to make the following extract. Alluding to our Pacific possessions, he says: "This territory is not more remote from the principal European States than from those parts of our own country whence it would derive its military supplies; and some of those States have colonies and possessions on the Pacific which would greatly facilitate their operations against it. With these advantages, and those which the attacking force always has, of choice of time and place, an enemy possessing a considerable military marine could, with comparatively little cost to himself, subject us to enormous expenses in giving to our Pacific frontier that protection which it is the duty of the general government to afford. In the first years of a war with any great maritime power, the communication by sea could not be relied upon for the transportation of supplies from the Atlantic to the Pacific States. Our naval peace establishment would not furnish adequate convoys for the number of storeships which it would be necessary to employ, and storeships alone, laden with supplies, could not undertake a voyage of twenty thousand miles, passing numerous neutral ports, where an enemy's armed vessels, even of the smallest size, might lie in wait to intercept them. The only line of communication, then, would be overland; and by this it would be impracticable, with any means heretofore used, to furnish the amount of supplies required for the defense of the Pacific frontier. At the present prices, over the best part of this route, the expense of land transportation alone, for the annual supplies of provisions, clothing, camp equipage, and ammunition for such an army as it would be necessary to maintain there, would exceed \$20,000,000; and to maintain troops, and carry on defensive operations under those circumstances, the expense per man would be six times greater than it is now. The land transportation of each field twelve-pounder, with a due supply of ammunition for one year, would cost \$2,500; of each twenty-four-pounder and ammunition, \$9,000; and of a sea-coast gun and ammunition \$12,000. The transportation of ammunition for a year for 1,000 sea-coast guns, would cost \$10,000,000. But the expense of transportation would be vastly increased by a war, and, at the rates paid on the same articles during the last war with Great Britain, the above estimates would be trebled. The time required for the overland journey would be from four to six months. In point of fact, however, supplies for such

an army could not be transported across the continent. On the arid and barren belts to be crossed, the limited quantities of water and grass would soon be exhausted by the numerous draught animals required for heavy trains, and over such distances forage could not be carried for their subsistence. On the other hand the enemy would send out his supplies at from one-seventh to one-twentieth the above rates, and in less time—perhaps in one fourth the time—if he should obtain command of the isthmus routes.

"Any reliance, therefore, upon furnishing that part of our frontier with means of defence from the Atlantic and interior States, after the commencement of hostilities, would be vain, and the next resource would be to accumulate there such amount of stores and supplies as would suffice during the continuance of the contest, or until we could obtain command of the sea. Assigning but a moderate limit to this period, the expense would yet be enormous. The fortifications, depots, and storehouses, would necessarily be on the largest scale, and the cost of placing supplies there for five years would amount to nearly one hundred million of dollars. In many respects the cost during peace would be equivalent to that during war.

"The perishable character of many articles would render it perhaps impracticable to put provisions in depot for such a length of time; and, in any case, there would be deterioration amounting to some millions of dollars per year.

"These considerations, and others of a strictly military character, cause the department to examine with interest all projects promising the accomplishment of a railroad communication between the navigable waters of the Mississippi and those of the Pacific Ocean. As military operations depend in a greater degree upon rapidity and certainty of movement than upon any other circumstance, the introduction of railway transportation has greatly improved the means of defending our Atlantic and inland frontiers; and to give us a sense of security from attack upon the most exposed portion of our territory, it is requisite that the facility of railroad transportation should be extended to the Pacific coast.—Were such a road completed, our Pacific coast, instead of being further removed in time, and less accessible to us than to an enemy, would be brought within a few days of easy communication, and the cost of supplying an army there, instead of being many times greater to us than to him, would be about equal. We would be relieved of the necessity of accumulating large supplies on that coast to waste, perhaps, through long years of peace; and we could feel entire confidence that, let war come when and with whom it may, before a hostile expedition could reach that exposed frontier, an ample force could be placed there to repel any attempt at invasion.

"From the results of the surveys authorized by Congress, we derive, at least, the assurance that the work is practicable, and may dismiss the apprehensions which previously we could not but entertain as to the possibility of defending our Pacific territory through a long war with a powerful maritime enemy. "The judgment which may be formed as to the prospect of its completion, must control our future plans for the military defence of that frontier, and any plan for the purpose which should leave that consideration out of view, would be as imperfect as if it should disregard all those other resources with which

commerce and art aid the operations of armies.

"Whether we shall depend on private capital and enterprise alone for the early establishment of railroad communication, or shall promote its construction by such aid as the general government may constitutionally give; whether we shall rely on the continuance of peace until the increase of the population and resources of the Pacific States shall render them independent of aid from those of the Atlantic slope and Mississippi valley, or whether we shall adopt the extensive system of defence above referred to, are questions of public policy which belong to Congress to decide.

"Beyond the direct employment of such a road for military purposes, it has other relations to all the great interests of our confederacy, political, commercial, and social, the prosperity of which essentially contributes to the common defense. Of these it is not my purpose to treat, further than to point to the additional resources which it would develop, and the increase of population which must attend upon giving such facility of communication to a country so tempting to enterprise, much of which, having most valuable products, is beyond the reach of market."

Some of the considerations which bear upon the questions submitted to the committee have thus been briefly suggested. But we do not deem it necessary to enter upon an extended argument to show either the constitutional power of Congress to aid the construction of the proposed roads, or its duty to exercise that power. The public mind has already formed its judgment on both these points. The public press, popular assemblies, and legislative resolutions, have spoken with a concurring voice; and recent representative conventions of the Democratic party at Cincinnati, and the Republican party at Philadelphia, have, with most remarkable unanimity and emphasis, declared the will of the people on this subject in resolutions intended for our instruction. The committee have deemed it their duty to give effect to this general wish, and have examined with much care the various plans which have from time to time been proposed.

**ATLANTIC AND GULF R. R.**—We learn that a meeting of the Board of Directors of the Albany and Gulf Railroad Company, was held yesterday, at which it was resolved to call a Convention of the people of South-western Georgia, and others interested in the Main Trunk Railroad, to meet at Thomasville on the 4th September, for deliberation and consultation with a view to the prosecution of the Atlantic and Gulf or Main Trunk Railroad chartered by the last Legislature.

We are gratified to learn that such a measure has been determined on, as by it an opportunity will be offered for the representation and consideration of all interests. We trust that it may lead to a good understanding, and that we may yet see secure the proffered aid of the State in the construction of a road so much needed by the section through which it is designed to pass. We understand that an address to the people of Southwestern Georgia has been prepared by the Board, which will be issued in a few days.

**MILWAUKEE AND MISSISSIPPI R. R.**—The grading of this road is now finished 32 miles beyond Madison, and is progressing rapidly. We learn that this section will soon be opened.



## MANAGEMENT OF TRAINS.—SIGNALS.

The following suggestions taken from *Herald* Railway Times, will not be found uninteresting at the present time. They are in some respects better suited to the English system of *railways* than to our *railroads*. But a perusal of them may be instructive.

The following plan for the better management of trains has been submitted to the consideration of companies:—

A railway train should be conducted and managed (as near as possible) in the same manner as a ship. There should be the following officers attached to each train:—

1. The conductor or guard, as he is now called.

2. The conductor should have a man to assist him, who should be in the same position as a mate is to a captain of a ship. He might be called the under guard.

3. A third man, if required, might be appointed to assist them and carry out their orders.

So much for the officers of the train. Now, as to the management of the train and the duties of its officers.

No doubt this part of the proposed system or plan may be greatly objected to, from the fact of its being entirely contrary to the one now in use; but let it not be condemned without trial. The train should be constituted as follows:—

1. There should be in front of every train a van, to be devoted to the conductor and his mate.

2. The front, sides, and back of this van should have glass windows. In this carriage the conductor and his mate should sit, so that they have a full back as well as a side view of the line.

3. At the end of the train another van should be placed, to be devoted to the under-guard.

An objection may be stated that there is some danger in propelling a van or carriage in front of the engine. There may be some danger in propelling a number of carriages; but if the van or carriage in front of the engine were so fixed or fastened to the engine as to become, in fact, a part of the engine, the objection to propelling it is entirely obviated. There would be then no fear of the van getting off the line, particularly if the van were heavy. The present objection to propelling a train is, that the passenger carriages are not fixed together, and, being light, are liable to jump off the rails. However, should this plan be objected to, it will not interfere with the communications between the guard and engine-driver yet to be explained, which may be applied to a train as at present composed. We will now assign to the officers their various duties:—

1. The conductor and his mate, in the van in front of the engine, should have express orders to keep a good look out, and also to signal to the engine driver when necessary; which could easily be done, as they would always have him in sight, not being more than a few yards from him. The signals could be by flags in day time, and colored lamps at night; or he could have the air-whistle (yet to be described) in his van. It should, in fact, be the duty of the conductor to control the train in every way, and to perform most of the duties now thrown upon the engine driver. When required to stop at a

station or elsewhere, he might apply the break to the wheels of his van.

2. The engine driver and his mate will now attend chiefly to the engine, and also to the signals of the guards in front and at the end of the train. They will have orders to stop at the various stations, and to look now and then along the train to see if all is right.

By this plan the train will be under the supreme control of the conductor in front. He and his mate will have no other duty to perform but to keep a good look-out ahead, and see if the line is clear, and apply the break when required.

Captain Galton states there can be no doubt that by far the larger number of the collisions would not have occurred had the break power been sufficient to enable the train to be stopped, under any circumstances of speed or gradient, in 200 or 300 yards.

It must be remembered that there is scarcely an instance on record of an engine driver not having had some short notice of an obstruction in front, during which he has used his best endeavors to stop.

According to the system now proposed, the guard in front of the train, the engine driver, and the guard at the end of the train, will apply their breaks immediately the guard in front signals for that purpose, and if he keeps a good look out, he ought to signal, so that no collision could take place.

It may now be asked—How is the under guard at the end of the train to communicate with the engine driver? We answer, by sounds and signs.

It may not be generally known that a patent has been taken out for communicating between guards and engine drivers by means of an atmospheric whistle.

The invention has been applied to a train on the Blackwall, and has been pronounced successful. The machinery has been well tested. It cannot easily get out of order, and only requires, like all other machinery, to be well lubricated.

The following is a description of the invention by which a sound equal to the loudest steam whistle can be obtained, and without any expense but the first cost of the machinery.

The nature of the invention consists in producing signals by means of arrangements of mechanism, which are so employed or worked as to keep up a good supply of compressed air. By this plan a whistle is sounded for signaling, whether from guard to engine driver or otherwise, by which means a complete system of railway signals can be formed, readily available when required, producing continuous sounds of various descriptions.

The following is a concise description of the machinery, as attached to a railway carriage or van:—On the axle of the carriage or van an eccentric is fixed, the ring of which is secured to a rod called the eccentric rod. To the upper part of the rod are two slings, which are connected to a plunger or piston, which, by the rotation of the axle, work an air compressing pump or cylinder. The air compressed by the pump or cylinder is carried into a receiver or reservoir, where it is compressed to a high degree, and kept stored ready for use. When required, it is let off from the reservoir through a tube, which, passing under the carriages composing the train, terminates in a whistle fixed on the carriage behind the tender, or on the tender itself.

The train will have the tube extending its whole length. The tube is formed of parts

which are attached to each other by a very simple contrivance. Attached to the receiver is an air gauge.

It will be seen from the above description that the under guard by means of the air gauge can always ascertain if his air receiver is full, and also what quantity or pressure of air is contained in it. It is well known that an enormous quantity of air can be compressed in a small space.

On a trial of the machine, it was found that with two 6-inch pumps a pressure of air equal to 50lbs. on the square inch was obtained in two or three minutes.

To sound a whistle 25lbs. on the square inch is quite sufficient, but the pressure can be easily increased to 70lbs. When the air gauge stands at 25lb. or 50lb., as the case may be, the under guard turns the air off, by means of a tap, so that the pump, although in motion, does not compress air.

If occasion requires a whistle to be sounded, and the air in the receiver is thereby decreased, all that the under guard has to do is to turn the tap on and let the air into the receiver again, until the gauge stands at 25lb. or 50lb. as arranged.

The under guard should always have orders to keep the receiver full, so that at the end of his journeys there may be sufficient to enable him to signal when the train starts again.

The pump is placed under the carriage or van, and a lubricator is attached to it and to its eccentric, so that they will require very little, if any, attention. No machinery is in the carriage. The receiver might be in the shape of a large box inside the van, which might be used as a seat.

The tone of the whistle produced by air is louder and clearer than that produced by steam, for no damp or condensation can take place in the former, while the latter often gets clogged by dust and damp.

So much for the description of the machinery. We now arrive at the most important part of this pamphlet, and will proceed to describe or suggest the signals between the under guard at the end of the train and the engine driver; but of course, every railway company would adopt its own system.

The under guard at the end of the train should have three signals:—

1. One whistle, meaning "All right—go on."

2. Two whistles, meaning "Proceed slowly—caution."

3. Three whistles, meaning "Danger—stop."

The under guard, for greater certainty, at the time of sounding his whistle, might fix outside his van a flag denoting the object of the whistle. For instance—

1. If a single whistle were sounded, meaning "All right—go on," he should fix outside his van a white flag in day time, or a white light at night.

2. If two whistles, meaning "Proceed slowly—caution," a green flag or a green light.

3. If three whistles were sounded, meaning "Danger—stop," a red flag or a red light.

It is also suggested that the guard should have outside his van when the train is in motion and everything is "all right," the white flag or the white light.

The engine driver and stoker should have orders to look constantly along the train and attend to the signals of the under guard, and they should answer them; that is, they should sound the steam whistle or fix outside the locomotive or tender a flag or lamp similar in



color to that displayed by the under guard. By this plan the under guard would ascertain if his signals were attended to.

Besides the signals of the under guard to the engine driver, the most important signal the engine driver could not fail to perceive, namely, when the under guard applied his break to the wheels of his van. This alone would be quite sufficient to attract his attention, but with the other signals it would be impossible that any misunderstanding could occur between them.

The under guard has also a large whistle fixed outside his carriage or van at the end of the train, which whistle is connected by a pipe to the air reservoir in his carriage or van.

In case a train is behind him, he would sound his whistle, so that a collision could be prevented, as the train behind would have instant notice that the line was not clear. In foggy weather this whistle could be sounded; and, it must be observed, the sound may be continuous.

It has been observed before that Captain Galton, in his report, states that the want of communication between the guard and engine driver of a train has contributed towards nine accidents. Five of these were due to a portion of the train having become separated. In one case the train had become separated into three parts without the knowledge of the guard or engine driver. The mode of communication, he says, to be effectual, should provide against this class of accidents.

In order to effect this, the writer has invented a plan by which this desideratum can be secured. The plan is both simple and inexpensive. A staff with a flag is placed in a horizontal position on the side of the tender, and will remain in that position until an accident happens.

To the lower part of the staff one end of a cord or line is fixed, which runs underneath the tender and all the carriages, and the other end is fastened to the last or under guard's carriage.

When an accident occurs, and a portion of the train becomes separated, the cord pulls the lower end of the flag-staff (the middle of which is fixed on a pivot), and it being so balanced as easily to swing up, the flag-staff is raised upright, and being caught by a spring, is fixed in that position. This plan it is submitted, would be effectual, and would carry out Captain Galton's suggestion; for the engine driver would then see that an accident had happened, and would immediately stop the train.

Such is the system submitted to companies and the public; and if it only creates discussion, and leads to the invention of a better system for securing the safety of passengers, the writer will consider that he has done some service to the public. It is, perhaps, unnecessary to add, that these inventions can be easily adapted to passenger and goods trains as they are now worked; and, when the fearful loss of life and amount of suffering occasioned by painful and oft-recurring accidents, together with the very large annual loss of capital to railway shareholders resulting from them, are taken into consideration, surely the public will concur in thinking that it is high time something should be attempted for their protection, and that these and other plans and inventions should be at least fairly tested before condemned, especially when they can be adapted at a trifling cost.

#### TEHUANTEPEC R. R.

Late New Orleans papers inform us that the steamer *Leonora*, owned by the Tehuantepec Railroad Company, has cleared from that port for the Coatzacoalcos river, on the Isthmus of Tehuantepec. She carries out the road contractor, with a large number of hands, clerks, superintendents, materials, tools, implements, &c., for the purpose of pushing to a speedy completion the carriage road which is now said to be progressing under the superintendence of Major Pratt, first assistant of the contractor. It is expected that this preliminary road will be ready for the transportation of mails, freight, and passengers, by the 15th of November next, and that the trip can then be made by this route from New Orleans to San Francisco in eleven or twelve days. In connection with this, the Company is about making arrangements for a weekly line of steamers to run between New Orleans and the Coatzacoalcos, on the Atlantic side and between San Francisco and the Gulf of Tehuantepec on the Pacific side. We have long regarded this enterprise as virtually abandoned, but the new Board of Directors just elected seem disposed to attempt something. It is said, as soon as the carriage road and steam lines shall be in successful operation, the Company intend to begin and rapidly build the railway.

A second vessel will sail from New Orleans in a few days, with an additional supply of men and material, and it has been determined to employ as many laborers as can advantageously be used upon the road. In addition to the ocean steamers on each side, the company will, in November next, place first class steamers of light draught on the Coatzacoalcos river, where, from the present until that time, the steamer *Leonora* will run regularly between Minatitlan and Suchil. At the latter point the stage road commences. Under its new organization the company has procured money for its operations, and a trusty agent will leave New Orleans in the next steamer for Vera Cruz, supplied with the necessary funds to pay for the work as it progresses.

From these facts it is clear that a vigorous and energetic effort has now been commenced to establish and operate this Isthmus transit route between the two oceans. After all the difficulties between Mexico and the United States on the subject, and the apparent want of interest and means, it now suddenly assumes the attitude of hope and success. As a channel of communication between the two oceans, it is far superior to the Panama and Nicaragua route, being a considerable distance north of them, and much nearer to the United States. By it the long circuit around Yucatan, Honduras, and Nicaragua will be saved, the voyage from New Orleans to the Coatzacoalcos being short and in a direct line. If it was established upon a firm basis, the California trade which now goes to New-York, would then all go to New-Orleans. It is, therefore, a rich prize, which well justifies the merchants of the latter city in struggling for it. The people of New Orleans have always regarded the Tehuantepec route as peculiarly their own, and so it really is.—*Phil. N. American.*

**COLUMBUS AND HOCKING VALLEY RAILROAD COMPANY.**—Pursuant to notice, the stockholders of the above Company met in the Court House in Athens on Wednesday, last, for the purpose of electing a Board of Directors. Mr. Borland, who has been President of the Company since its first organization, Mr. Linton, Chief Engineer, and Mr. Latrobe,

Chief Engineer of the North-western Virginia Railroad, with which this road proposes to connect at Parkersburg, were in attendance, and spoke in flattering terms of the early construction of this great improvement. The following gentlemen were elected Directors of the company for the ensuing year: Charles Borland, of Lancaster; Samuel B. Pruden and Daniel B. Stewart, of Athens county; Austin Curtis, of Washington county; James Cook, of Parkersburg, Va.; Benjamin Deford and Benjamin H. Latrobe, of Baltimore.—*Athens Messenger*

#### MESILLA VALLEY—ITS SETTLEMENT.

Our readers will remember the opinions we have expressed of the value of this section, and of the probability of its early settlement. That others believe us to be correct the following article will show.

**MESILLA VALLEY COLONY.**—It is well known to many of our citizens that a movement is on foot, under the auspices of Hon. J. C. Reid, for the purpose of colonizing the Mesilla Valley. This favored land is in Southern New Mexico, and is a portion of the old State of Sonora. It was lately purchased from Mexico under a treaty formed by Gen. Gadsden, late minister to that Republic. It lies South of the Gila River, between thirty-one and a half, and thirty-three and a half degrees North latitude. It has hitherto been but sparsely settled by the Mexicans and half breeds, and the rich mines with which it abounds have been worked but little on account of the proximity of a tribe of cowardly, but thieving Indians.

We have but little doubt that this region is destined to become one of much importance, possessing, as it does, a mild, salubrious climate, rich soil and immense stores of precious metals. Besides, the only practicable route for the great Pacific Railway is through this Valley, and it was mainly on account of the importance attached to this fact that the purchase was made.

The company is rapidly receiving recruits, and from the present prospects we presume that the full complement of emigrants will soon be obtained. It is their intention to leave about the 1st of September next, going by water to some convenient port in Texas, thence by land through El Paso. Those of our enterprising young men who wish to make a fortune, and aid in laying the foundation of a populous State, will find in this movement ample scope for showing what "stuff they are made of." The emigrant should furnish himself with good fire-arms, the provisions, wagons and teams, &c., being the joint stock of the company.—*Marion (Ala.) True American.*

#### MANUFACTURE OF ALLOYS OR COMBINATIONS OF METALS.

The most important application by far, of the admixture of metals, is that which refers to increased mechanical strength. On this head there seems to be an enormous scope for industrial development. During many years a gross error seemed to be gaining ground, to the effect that purity was an essential condition for strength in metals, but nothing can be farther from the truth. The grand characteristic of purity is the power of crystallising; so that the more pure the metal, the less its cohesive strength, of which



an excellent example is afforded by zinc.—The metal when quite pure, cannot be rolled into sheets, and requires therefore to be mixed with a very small quantity of lead before being sent to the rollers: the lead diminishes the tendency to crystallise, in the same way that stearic acid is prevented from assuming the crystalline form, by the presence of a minute portion of wax or arsenious acid. The necessity for mixing copper or some other metal with gold or silver is extremely well known; and yet this purity hypothesis, with regard to metals in general, has not only progressed rapidly but taken deep root in quarters where more knowledge of the truth was to have been expected. Hence we have seen pure iron, pure copper and pure lead employed, where this very purity has been the chief cause of failure. Not to mention the monster gun of Mr. Nasmyth, with its pure iron, we will relate an instance which had many illustrations to prove it:—On one of the large English railways a contract had been made with a large manufacturer to supply the purest copper for making the fire-boxes of locomotives. This copper was sent, and the fire-boxes made; but when used they were found to wear away with the most astonishing rapidity; so that impurity in the metal was at once suspected. A searching chemical analysis proved, however, that the manufacturer had only too closely complied with the terms of his contract; the copper was absolutely pure. Again if we regard the present state of copper sheathing in regard to ships, we see that the pure metal has been quite expelled from use by the "yellow metal" or combination of Mr. Muntz. In short wherever mechanical strength is of importance, a pure metal is interdicted, and this too even in the case of iron. We are not ignorant that such an assertion will excite the surprise of many, and perhaps elicit the hasty contradiction of a few; but the opinion will bear discussion, and has evidence in its favor. Thus Berzelius tells us that "Iron containing copper has more tenacity than any other," and a patent has actually been taken out in England for such a mixture. Again, zinc, in minute quantity, is known to increase the strength of iron; and the same holds good with respect to gold. The best Swedish iron generally contains a little chromium, which latter metal was in fact, first discovered in an iron remarkable for its great strength. Not to burden ourselves, however, with examples, we will proceed at once to disclose the probable action of these mixtures upon the iron. We have seen that in the instance of stearic acid, the disposition to crystallise can be prevented by the addition of a very minute portion of some foreign substances: thus, one part of arsenious acid will prevent the crystallization of 1000 parts of stearic acid. In the same way the tendency of iron to crystallize may be prevented by intermixture with other metals. And the great question to be solved is,—what metal answers the purpose best? He who studies the book of Nature with care will seldom lay it down without profit; and thus instructed, we direct attention to one of the most remarkable combinations of iron known to mankind.

In all quarters of the world, as if resolved to multiply the lesson, nature has placed certain metallic masses, to which the name "meteoric iron" has been given, on the supposition that these masses have fallen from the atmosphere. Many of them are known to have lain for ages where they now are, but yet they retain their original metallic

character, and seem to suffer little or nothing from the oxidising influences of air or moisture. The composition of this meteoric iron is singularly uniform, and whether near the poles or the equator, consist chiefly of iron and nickel; the latter varying from two to 10 per cent., with small quantities of cobalt and (it is said) chromium. The remarkable fact that the three first metals, iron, nickel, cobalt, are the only ones that obey the magnet, seems to establish a connection between these masses and the name they bear, which may one day lead to interesting discoveries; but at present we wish to direct attention wholly to their apparent indestructibility, and to the great strength and ductility of the metal that composes them. To close our eyes upon a lesson of this kind is absolute folly; and as science has demonstrated to us the actual composition of meteoric iron, it follows that, if it really possesses any valuable qualities, we ought, by art, to enjoy those advantages thus providentially placed before us. In other words, the manufacture of meteoric iron ought to become a branch of the national industry. So far as science is concerned, this important question has not been lost sight of;—artificial meteoric iron has been made, and it has been tested, so as to prove that its qualities are identical with those of a native compound; that in short, it is more ductile and has more tenacity than pure iron, and is not so liable to rust or oxidise.

A mixture of 98 parts of iron and 2 of nickel has all the peculiarities of the best meteoric iron; and such a mixture was recommended to the notice of the British government during the late war. It was proposed to that government to make cannons, &c., from artificial meteoric iron, and some measures were actually begun for the purpose of testing the value of the proposition. It is perhaps superfluous to say that, as usual, official routine, petty jealousy, and ignorance, were stronger than either the iron or the argument, and accordingly nothing was done. Now, however, the question returns to that intelligence which gives life and character to all free institutions: the fabrication of meteoric iron is before the manufacturing industry of the world, to be accepted or refused.

Hitherto the difficulty of procuring nickel exempt from arsenic has offered an insuperable obstacle to success but now we know that in most countries an abundant supply of pure nickel exists. Within these few years an ore of sulphuret of nickel, devoid of arsenic, has been found near Inverary, in Scotland, and by its means meteoric iron has been made of the very best quality. This, in fact, formed part of the argument presented to the consideration of British governmental authorities. A mine of this ore exists on the estate of the Duke of Argyll, and promises to yield an ample amount of ore when fully developed. It is now worked, and as we have before said, the produce may be easily converted into the desired compound, at a merely nominal cost. Specimens of this kind are now before us, and extensive experiments have shown the practicability of this manufacture, so that we have no doubt of finding, within a few years, the great lesson so long held up by nature for our guidance brought home to the hearths of the million, in the demonstrated form of iron instruments which possess increased strength and a greatly diminished tendency to rust and tarnish. Such at least are the advantages offered by the hand of science to this interesting branch of manufactures; it is not often that science promises in vain.

[From the Binghamton Daily Republican, Aug. 1.]  
**IMPORTANT RAILROAD TRIAL.—VERDICT**  
\$10,000.

We are indebted to the eminent counsel engaged in the cause for the following full memorandum:

**SUPREME COURT.—John Vaughan vs. The New York Central Railroad**—Cortland Circuit, July 29th, 1856. Justice Shankland presiding. Daniel Gott and D. S. Dickinson, for plaintiff; Davis and Leach and C. B. Sedgwick for defendants.

It appeared that by the carelessness of the defendants' agent, that there was a collision at the Oneida depot in September, 1853; that a freight train ran into the passenger train in which the plaintiff, a young Irishman of about twenty years, was a passenger; and that both of his legs were so badly broken that it was two years before he could be removed from the depot buildings to his home in Cortland county.

The collision happened about daylight on the morning of the 15th of September; on the morning of the 19th the defendants proved by their superintendent that he had, by direction of the company, settled with the plaintiff for \$800 and an agreement to pay the expenses of his sickness. This alleged settlement was the principal issue and most interesting feature in the cause.

The defendants produced the receipt of the plaintiff for the \$800 in full of the injury, signed by the mark of the plaintiff, and witnessed by a Mr. Kavan, a Catholic clergyman, a stranger to the plaintiff. It appeared that on the 17th the superintendent made an arrangement with the clergyman to meet him at the plaintiff's room on the morning of the 19th; that they met there accordingly; the nurse was sent out of the room, contrary to the directions of the physician; and the superintendent testified that the plaintiff, while perfectly competent to do business, agreed to accept the \$800 and payment of expenses in full satisfaction of his injury—that he put \$800 in bank notes in his right hand in packages—that plaintiff did not count it, but held it a few minutes and gave it to the clergyman to take care of, and signed the receipt by his mark, and it was witnessed by the clergyman.

It was proved that the plaintiff wrote a ready and fair hand. The nurse who was sent out of the room was a medical student of three years. He testified that at the time the plaintiff was considered so dangerous that his death was hourly expected—that visitors had been excluded, the room darkened, and that he was so completely under the influence of opiates given to quiet his pain, as to be unconscious from drowsiness and stupefaction for most of the time, and that he had not sufficient mind and memory to transact business requiring thought and reflection.

Other physicians who attended him expressed the same opinion, and others still thought he was at or about the time capable of doing business when roused. The Catholic clergyman died in March last. The plaintiff's nurses never saw a dollar of the \$800 alleged to have been paid him, nor was there any trace of it given except by the Superintendent as before stated, though the plaintiff was poor.

The defendants proved they had paid for the plaintiff's expenses for two years illness while confined at the depot, about \$3,000, besides the \$800.

The Judge charged the jury that if they found for the plaintiff, they should allow to the defendants and deduct from their verdict the \$3,000 thus paid.



That if they found that the plaintiff was competent to transact business at the time he gave the receipt, he was bound by it, and it was a complete defense. But if they found that the receipt was obtained from him when he was incompetent, it was void; and the plaintiff was entitled to a verdict. The jury returned a verdict for plaintiff for ten thousand dollars.

#### KENTUCKY MILITARY INSTITUTE.

We have just received the catalogue and circular of this excellent Institution. During the past year there have been in all 130 Cadets in attendance, coming from every State in the Union. The Faculty consists of seven Professors and two assistant Professors, gentlemen of reputation and station. The location of the School at Franklin Springs, is one of the healthiest and pleasanter in the State.

Useful knowledge is the object of this School. Its course, without neglecting the usual college curriculum, embraces those studies which bear most immediately on industrial and professional occupations, all its departments having, as far as possible, been organized so as to be alike adapted to the general views of the man of liberal education merely, and to give direction to the more specific and extended research of particular pursuits. The pressing labor of our generation is to reclaim a continent to culture and to commerce. To prepare for this toil, education should be manly, unfolding together the full faculties of mind and body. Hence field exercise should accompany all mental acquisitions, in order that the student may be hardening himself for the out-doors of life. In aid of this object and of good discipline, without which all right development is impossible, the *military and gymnastic* exercises are employed as better combining strength and grace than any other, while they afford an incidental knowledge, that, in the chances of life, may be of the greatest value; but they will never be allowed to interfere with academical studies, being limited to play-hours only.

#### SOUTHERN PACIFIC,

OR,

**Texas Western Railroad Co. Agency.**  
The undersigned, Agent for the Texas Western Railroad Company, will furnish for a short time only, the full paid 5 per cent. stock of said Company on the usual terms of two dollars on each share of \$100, and balance as instalments mature, in 6 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Feb. 14.

106 West Fourth Street Cin.

#### The Kentucky Military Institute,

DIRECTED by a Board of Visitors appointed by the State, is under the superintendence of Col. E. W. MORGAN, a distinguished graduate of West Point, and a practical Engineer, aided by an able Faculty. The course of study is that taught in the best Colleges, with the addition of a more extended course in Mathematics, Mechanics, Practical Engineering and Mining Geology; also in English Literature, Historical Readings, Book-keeping and Business Forms, and in Modern Languages.

The nineteenth semi-annual session opens on the second Monday in September (2th Sept.), 1856. Charge, \$102 per half yearly session, payable in advance.

The reconstruction and extension of the buildings will make room this session for additional students, who have the past year been necessarily declined.

Address the Superintendent, at "Military Institute, Franklin county, Ky.," or the undersigned.

P. DUDLEY,

President of the Board.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance*.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,

Publisher and Proprietor

167 Walnut St., Cincinnati

## T. WRIGHTSON & CO.,

# BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

## BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, AUGUST 26, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, AUGT. 26

#### OBJECTIONS TO THE CONSTRUCTION OF THE PACIFIC RAILROAD REVIEWED.

We had supposed that the elaborate reports of numerous U. S. Engineers, and of Col. A. B. Gray's detailed examination of the Texas Western Route had entirely settled the question of the practicability of constructing a Pacific Road at a moderate expense, compared with the immense magnitude of the work. But it seems, that so far from this, that an ingenious member of the Congressional committee, a Mr. KIDWELL, has found that the engineers were all mistaken, and that if the road were made it would be very unprofitable! When we read such things, and see the exceeding obscurity of mind which still characterizes a large portion even of intelligent and educated men, we begin to believe it is predestined that the greatest part of mankind shall dwell in the regions of darkness, and delight in meditating on the obstacles to human progress. As we do not belong to that class of beings, we shall take leave to review Mr. Kidwell's views, and if we do not convince, shall at least show there is another side of the question.

Mr. Kidwell, with commendable liberality, admits that a railroad to the Pacific is *possible*, even practicable, but that it is morally impracticable, because, *first*, of its immense cost; and *secondly*, because it is good for nothing when made. These are certainly strong and solid objections, if only true. Let us review them.

1. OF THE COST. Mr. Kidwell's mode of reasoning on this point is an exceedingly plausible one. Taking some of the most expensive New England roads as a basis, he deduces their cost, and because the Pacific Road is through a new country, concludes it must be even more expensive. Now this is a delusive mode of reasoning. The great difference in the cost of railroads consists in the *character of the ground* in which they are made. It is quite possible a Pacific Railroad should cost ten times as much per mile as any New England road, and equally possible that it should not cost half as much. The reader knows very well that the roads selected by Mr. Kidwell, in New England and mountain roads, are by far the most expensive in the

United States, and therefore, in the very outset, the comparison is an unfair one. But, since this mode of argument is preferred, we shall hold the objections to it, and let us see how far the result will be from the estimate of the engineers.

The six roads taken by Mr. Kidwell as examples, are the "Boston and Worcester," the "Western," Mass., the "Baltimore and Ohio," the "N. Y. Central," the "Pennsylvania," and the "New York and Erie." No intelligent man need be told that these are by far the most expensive roads in the United States; that one-fourth their whole cost was in discounts on money, and another fourth in mismanagement and delays, owing to inexperience and want of ready money. Notwithstanding all this, a Pacific Road, at the same cost, would be but \$140,000,000, and with the present experience in road building and ready money, it would not be half that sum. But Mr. K. says:

"The total length of these six railroads—more important, and located amidst a more dense population than any other six railroads in the United States—is 1,595 miles. Having command of labor, food, materials and skill, on the best possible terms, upon the very line of the roads, and throughout their extent, their builders constructed them at far cheaper rates than can be hoped for upon the sand plains, or upon the snowy mountains, far distant from the habitations of men. And yet the cost of building and equipping those 1,589 miles, in the best part of the country, was \$112,369,697 20! which is over \$70,000 per mile, and but a very small part of it double track!

In the face of this experience in the cost of building railroads in the most populous portions of the United States, the engineers have submitted official statements, estimating the cost of building a railroad from Fulton, in Arkansas, through Texas, over waterless and sand plains, and across lofty mountains, 2,075 miles, to San Francisco, in California, at the sum of \$87,990,000! They officially state, for our official guidance, that, in their opinions, a road 480 miles longer than those six railroads, and at \$24,369,697 20 less cost than what we know those six roads cost, can be built across those uninhabited, barren and irregular mountains!"

Then, as a conclusion to the whole matter, Mr. K. says:

"No hesitation is felt in placing upon record the opinion that no railroad 2,000 miles long, from the valley of the Mississippi to San Francisco, upon any route whatever, can be built and stocked for \$100,000 per mile—\$200,000,000. For, however cheaply built, the road will require an immense stock to enable it to have sufficient capacity to earn interest upon the prodigious expenditures of money its building will necessarily involve."

Then the argument is that the Pacific Road,

based on the cost of the six most costly railroads in the United States, will be so much; and that then the actual cost (owing to difficulties of construction) will be *double the same rate!!* This is certainly a modest estimate, and being made in the face of all the actual surveys and observations of engineers, entitles the gentleman from Virginia to be called a man of genius and of figures. Let us try the question by his own standard. Here are six railroads in the Central West, with their cost, in round numbers:

|                                   | Miles. | Cost.        |
|-----------------------------------|--------|--------------|
| Cincinnati to Columbus.....       | 254    | \$10,000,000 |
| Illinois Central.....             | 704    | 20,000,000   |
| Michigan Southern.....            | 243    | 7,000,000    |
| Michigan Central.....             | 282    | 8,000,000    |
| Chicago and Burlington.....       | 210    | 6,000,000    |
| Chicago, Alton and St. Louis..... | 260    | 8,000,000    |
| Aggregate.....                    | 1,953  | \$59,000,000 |
| Average per mile.....             |        | \$30,000     |

Now we should be glad to know why this is not just as fair a comparison as that of six New England and mountain lines, traversing the very hardest country in the United States? If it be said that these roads are in a country well adapted to railroad construction, the very same may be said of the whole Texas Southern Road, from Shreveport to El Paso. Col. Gray examined this part of the route with the utmost care, and gives the result in detail. For the 783 miles from Shreveport to El Paso he estimates, in round numbers at \$20,000,000, which is about \$26,000 per mile; but, at \$30,000—the average of the above table—it would be but \$23,490,000.

For 566 miles in New Mexico, which is more difficult, Col. Gray estimated at \$28,000 per mile. For the 260 in California \$33,000 per mile. The aggregate of Col. Gray's estimate is \$44,470,000. Col. Gray made this estimate with all the details of the New York and Erie Road before him, and with full knowledge of all the ground he had been over, and with a careful revision of all the means by which fuel and provisions were to be obtained. Supposing now that the actual cost were \$40,000 per mile—which is an average advance of 40 per cent. on Col. Gray's Report—then the result will be—

|                                 |              |
|---------------------------------|--------------|
| Shreveport to San Diego.....    | 1,618 miles. |
| Cost, at \$40,000 per mile..... | \$64,720,000 |

Unless we suppose the engineers to know nothing about their business, and to have falsified all their observations, an advance of 40 per cent. on their estimates will certainly cover all contingencies. Then we have a complete Pacific Railroad, from the Mississippi to the Ocean, for *sixty-four millions*. This is just *one-third* of Mr. Kidwell's imaginary estimate.



In addition to what we have given in the above tables, it is well to mention that the average cost of all the New England roads is but \$40,000 per mile, and of the roads in the Middle States still less. Hence the extraordinary unfairness of Mr. Kidwell's comparison. Mr. K. bases his imaginary estimate on the idea that it is to be immensely expensive to find provisions and fuel, on this uninhabited district. In this there is a great mistake. Beef, and Pork, and Corn-bread, which is the basis of the whole supply of provisions, are much cheaper in Texas than in New England. Provisions will be absolutely cheaper on the Texas Road than on the New England. Fuel enough is found on the route. The only real addition to the cost is in the transportation of men and materials; but the road will progress from four points, at which men and material can be furnished, and as the road progresses be carried over the road itself; first, from the Mississippi; secondly, from the Pacific; and thirdly and fourthly, from each side the Colorado, on which steamboats navigate. This is a sufficient reply to that objection. In fact, all Mr. Kidwell's estimates are purely imaginary. In another article we shall consider the question of profit.

#### THE PACIFIC RAILROAD.

We are covering the ocean with steamers, and binding other continents to us with the girdle of steam, and yet there is one grand belt of steam which we have as yet neglected to make, and buckle around our own national body, and which is, in the highest degree, necessary to support our strength, give us new strength, and contribute to our ease and success, as the Great Republic of the West, in the race of national greatness and prosperity. Lords of the soil across a continent, we build grandly on the shores of the Atlantic and the Pacific, and suffer a wilderness between to be a wilderness still, cutting no opening through it to pass the beams which must bind the walls on either side together. The subject of a Pacific Railroad has long been talked of, every consideration of national interest, convenience, prosperity, and greatness, has urged the accomplishment of this great work, and yet the work is not begun. There should be no further delay. Delay in this matter becomes now inexcusable national neglect of our interests, for which we deserve to suffer if we so blindly continue it.

There can be no doubt that the whole country is in favor of a Pacific Railroad. Its necessity, and the great national and social benefit of which it would be productive are apparent to every one of common penetration. That it is a great internal improvement which it is right and proper that our government should at once promote with a generous hand, needs no argument to prove, that Congress cannot better signalize its close than by passing a bill which shall connect our possessions on the Atlantic and Pacific together than by the internal belt of a railroad. The whole people would applaud the act, and acknowledge its wisdom.

The plan proposed and now before Congress is for three roads—an extreme Northern, Southern, and Middle route, and it is proposed to give for them alternate sections of land.

The plan is a wise one; the land, as it now lies, is not worth one cent per acre, but with this great connecting link of the Atlantic States with California, through it, and the land becomes worth untold millions, of which the Government will still retain a half, while one of the greatest internal improvements yet attempted by this country will be accomplished. Rather, however, than not have this connecting link with the Atlantic States with the Pacific shore, if three roads cannot be obtained by the plan proposed, better give the whole land for one road. Such would not be too high a price to pay for it, and might safely and wisely be given, and as a people we would still be the gainer, socially, politically and pecuniarily. To secure the road is the great point, and looking at the immense beneficial results which must of necessity flow from it, we cannot estimate any price too high to pay. Three roads are better than one, but the belt of iron and steam we want, whether it be composed of three strips or one, so long as it spans the wilderness and binds this great Republic together from ocean to ocean.

That this great Pacific enterprise is practicable, is admitted on all sides. There is, we believe, a probable majority for it in the House, and a decided one in the Senate, and the people are in favor. Why then should there be further delay? In addition to all that has heretofore been urged in favor of the road, recent events in California seem to supply another powerful reason why the Pacific Railroad Bill should be at once passed, and the work commenced. There have been rumors, since the formation of the Vigilance Committee in San Francisco, of the separation of California from the Union. On what tangible foundation they rest, or whether they rest on any we do not know. One thing, however, we do know, and that is, that when one member of a family lives far apart from another, and neither can reach the other but by a roundabout, long, and tedious journey, they are more likely to become estranged from each other, than if the road between them was short, direct, and easily to be traveled. We do not say that the two seas and the Isthmus, which must be traversed before we of the Atlantic States can reach our brothers on the Pacific, must necessarily produce their estrangement from us, or will weaken the hold which we may have on them, but reason tells us, that bound to us by a stronger bond than she is at present, bound to us by the better mutual protection which each can give to the other, bound to us by blossoming plains of civilization and prosperity, all belonging to the same great Republic, and blossoming where there is now naught but a wilderness. The commerce of this country, the gold of California, the common weal, social, political and pecuniary, of this Republic, from the Atlantic to the Pacific, calls loudly for a Pacific Railroad; and we trust that this long delayed measure, so much needed, with so much to recommend it, and with so little that can be urged against it, will receive, at once, the earnest attention of Congress, and a favorable issue. Let our Legislators hold up their hands for it, and hold them up at once. Let them make smooth the way from the Atlantic to the Pacific, open a path-way on our own domain, from one to the other, they will thus fulfill their duty, and secure to this Republic an internal improvement of the grandest character, and the benefits of which cannot be estimated.—*Courier & Enquirer.*

From the Harrison (Texas) Flag.

#### TEXAS BRIGHT AND DARK SIDE.

NUMBER THREE.

According to the census of 1850, Harrison county stands foremost in wealth and population of any county in the State, containing at that time 11,822 inhabitants and 521 farms and 13 manufacturing establishments—but, as there has been a great and rapid increase of population, wealth and power throughout the whole State, and agriculture, manufactures and commerce have kept pace with immigration, it is evident that the census of 1850 is of little use to us in arriving at a correct knowledge of the flourishing condition of the country at this time.

The late able report of the Comptroller of State, affords valuable data from which we will select a few facts to corroborate our remarks, and at the same time present an interesting view of our social and political condition. During the last four years the assessed acres of land having increased eight millions of acres, or at the rate of two millions of acres per year; while the value of lands has been increased *twenty-five and a half millions of dollars!* or at the rate of more than *six and a quarter millions a year.* The number of negroes has increased in the last four years *twenty-seven thousand*, and a value equal to *twenty-four millions of dollars* added to the slave capital of the State. While our horses and cattle have not increased much over 600,000 in number, their value has increased *nine millions of dollars.* In 1850 the average assessed value was \$7 82 per head—now it is \$10 48. The increase in the value of other property, such as town lots, money at interest, &c., has gone up from eleven millions of dollars in 1852 to *twenty and a half millions of dollars* in 1855. Here is an increased value of taxable property of more than *sixty-eight millions of dollars*, all within the last four years. Did we not have the facts and figures before us, under the official seal of the proper office, we might well consider the statement as a fancy sketch; but such are the plain facts, and such is the prosperity of this great and growing State.

With these evidences before us of the flourishing condition of the State at large, we may safely conclude that Harrison county has not fallen behind her sister counties in the ratio of increasing wealth and improvements—in fact a ride over any part of the county will satisfy any one that this is the case—new farms are opened, dwellings and out-houses are erected, cotton presses and gin houses are built, and in the fall and winter are actively engaged in preparing the cotton for the market; some twelve or fifteen saw mills are now in operation, furnishing lumber at the mills at ten dollars per 1000 feet—a steam flouring mill has been lately established in Marshall, and is now in full operation, with as much wheat as it can manufacture, and a constant demand for the flour at liberal prices.

The soil is a rich gray sandy mold, with a substratum of red loam, easily cultivated and very productive. Among the productions which may be regarded as naturally adapted to the soil, and which now form a chief and important article of commerce, cotton stands prominent, and may be regarded as the source of much of its wealth and power. Breadstuffs of every description are easily produced, and in great abundance. Corn, wheat, rye, oats, barley, in fact all the cereal grains, when put



in, in proper season, and cultivated with suitable attention, yield a rich return to the hand of industry. Until the present season there has been but little attention paid to the culture of wheat. Last fall there was a thousand hushels or more sown, and the present crop has demonstrated to planters and farmers that there is economy, as well as good policy in raising their own bread, instead of sending off their money to their northern neighbors, and paying high prices for Indiana or Ohio flour. Although the winter was unusually cold, and the spring unfavorable for the full development of a crop, still there was a satisfactory return, some instances yielding as high as twenty-five bushels to one planted. The harvest takes place from the middle to the 25th of May, so that if we had a railroad connection from here to the Mississippi river, we might furnish the Eastern or Southern cities from a month to six weeks earlier than they can obtain new flour from the Western States.

Garden vegetables of every description, and all the esculents of the North are raised with ease and facility; new potatoes, peas, beans, cucumbers and green corn can be had from our gardens by the middle of May, leaving ample time to raise the second crop upon the same ground. The fruits of the North, peaches, pears, plums, apricots and apples flourish alongside the fig and pomegranate of the tropics.

Coal of excellent quality is found on the Sabine river, also in the eastern part of the county, on Lake Caddo, near the terminus of the Texas Western Railroad. Iron ore pervades the greater part of the county, and in some localities it exists in almost pure native iron, ready for the blacksmith's forge. Extensive quarries of red sand or free stone are found all through the county; this stone is rough and porous, and as yet has been but little used for building purposes, but late experiments on the railroad prove it to be a valuable material for heavy masonry. It is soft and easily worked, and may be reduced to any desirable form when taken from the quarry, but when exposed to the atmosphere it becomes hard, and as durable as marble.

Wild lands are held at from two to five dollars per acre, and farms from five to forty dollars per acre, owing to the location, improvements, cultivation, &c. We have spoken of the rich and varied productions of Harrison county: it may be proper here to remark that the same description will apply, with little variation, to the adjoining and neighboring counties of the State. It may be well also to bear in mind that although "Paul may plant, and Apollos water, but God giveth the increase." Even the rich lands of the delta of the Nile, in lower Egypt, without the annual overflow of that river, to moisten and fertilize them, become a desert waste, and famine spreads over the land. So in Texas, without the showers from Heaven to dampen the soil and promote the growth of vegetation, the fertile field becomes an unproductive region, and the beautiful garden a desolated ruin. Such is now the case in this county, and in some other parts of Eastern Texas. The rains have held off so long that many fields of corn are entirely ruined and the spring gardens utterly destroyed, and, as frequently is the case, the apprehension of a calamity has a greater effect than the reality. The most common necessities of life are only to be had at the most exorbitant prices.

July 16, 1856.

\* \* \* \*

#### CONVENTION.

A convention has been called of the friends of the various lines of railroad projected from the seaboard in North and South Carolina through the valley of the French Broad river to the railroads of the west, to be held at Asheville, North Carolina, on August 26th.

#### EXPLOSIONS.

Explosions and accidents seem to be the order of the day at present. We hardly take a paper in hand but we read of some new disaster, resulting in the loss of property or life. On the 10th inst. an explosion occurred at Wilder's Safe Factory, in Brooklyn; on the 14th a locomotive blew up on the Lake Shore Railroad. Fortunately it was attached to an empty freight train, so that no passengers were exposed. Now these accidents are invariably the result of improper attention by those who have charge of the boiler, and as such are in a great measure under the control of the parties employing the workmen. If every railroad superintendent would, on the instant discharge every man who is detected in careless or reckless actions, and judiciously promote those who were found to be efficient, we should hear less of accidents, less of loss of life, and less of the danger of railroad traveling.

#### COAL ON THE PACIFIC.

We some time ago noticed on the authority of the *San Diego Herald*, that coal had been found on the shores of the Pacific near that city. The value of such a discovery cannot be overestimated. We are just in the receipt of the *San Diego Herald* of June 28, which confirms the previous reports. San Diego, it will be remembered is the terminus of the Pacific Railroad. The *Herald* says:

SAN DIEGO COAL COMPANY.—We last week paid a visit to the works of this Company, and through the kindness of Judge Ladd were lowered into the bowels of the earth some 110 feet. Having sunk their shaft below the level of the Pacific, the water comes in so rapidly that it is feared they will be obliged to suspend operations for two or three weeks till they can get a steam pump from San Francisco.

The party prospecting on Mr. Rose's Ranch have bored to the depth of 120 feet, and are pushing their work with vigor. One of Mr. Rose's men discovered a new mine, last Wednesday, and brought some specimens into town. This is the fourth mine that has been discovered within four or five miles of town, during the past six months.

The vein that Judge Ladd's party are commencing upon is about five feet thick at the place where they are sinking the shaft, but increases in depth as it dips towards the bay.

We find in the *Railroad Record* an extract from a private letter from a gentleman of this place, which alludes to one of the Companies here, as follows:

"A few days ago a Coal Mining Company, of which I am President, found a five feet vein of good coal on the ocean shore, one mile from our port, and other Companies are digging, and no doubt of getting a good supply—so fuel is here, cheap, plenty and good."

## Railroads.

### GREENVILLE AND FRENCH BROAD RIVER RAILROAD.

The survey of the mountain division of this road has just been completed and the following report made to the company, by George W. Peake Esq. It demonstrates the entire feasibility of a road on this route across the Blue Ridge and will be read with interest by all who desire the early completion of our southeastern connections:

*To the President and Directors of the Greenville and French Broad River Railroad Company.*

GENTLEMEN:—I have the honor to lay before you the following report of the survey of the mountain division of your road:

After making a thorough reconnaissance of all that section of country, lying between the town of Columbus, on the east, and Butt Mountain, on the west, its topographical features indicated the possibility of three routes across the great spur of the Blue Ridge, which divides the waters of Green and Pacolet rivers, and constitutes the principal obstacle to the passage of the Blue Ridge with a railroad line. We will distinguish the three routes, by the nomenclatures of Pacolet, Howard's Gap, and North Tyron. Two of these routes have been surveyed. On the 24th of October last, I organized a corps of engineers, and commenced field operations near Columbus, which is situated immediately upon the western extremity of the Cowpen ridge. With a view of passing up Pacolet river, a maximum grade of 72 feet per mile was projected, tracing the line along the slopes of the south side of Tyron mountain, cutting through the high ridges and filling up the deep ravines which make down from it. After extending the line to a point opposite the Howard's Gap, where the line through that Gap will deflect from the Pacolet line, it was deemed advisable to discontinue operation on this side of the mountain, and move over to Butt mountain, that as much of the line might be completed at the north side of the mountain as possible, whilst the weather was favorable.

Commencing at Butt mountain, the line was carried in a southerly direction, descending at the rate of 60 feet per mile, to a level grade across a small branch of Laurel Creek; thence ascending upon a 40 ft. grade to a gap in the ridge at John McMinn's, which divides the waters of Laurel and Heatherly creeks; thence descending along the slopes of the west side of heatherly ridge, at the rate of 60 feet per mile, to a point near Green river, passing around the edge of the ridge upon a curve of 630 feet radius; thence upon easy and undulating grades descending the slopes of the Green river hills to the crossing



of that river, at an elevation of 82 ft., and a bridge 250 feet long.

Up to this point the line has been somewhat circuitous, attaining a length of four miles 3,280 feet, and a descent of only 142 feet in that distance, when actually, upon a straight line, the distance will not exceed 2.5 miles. I am decidedly of the opinion, that the line back to Laurel creek is susceptible of very great improvement in distance. By elevating the bridge over Green river 20 feet higher than the present crossing, the high ridge which divides the waters of that river and Laurel creek, may be cut through, or a resort to turning may be necessary to accomplish that object; thereby shortening the distance from Butt mountain to the river at least two miles. From Green river the line is traced upon level and ascending grades of 40 feet per mile, to a gap in the ridge which divides the waters of Camp creek and Corn's spring branch; thence along the south side of Camp Creek to a level grade across a small branch which heads near Pace's gap; thence ascending said branch at the rate of 40 feet per mile, to Pace's gap, in the ridge which divides the waters of Green and Pacolet rivers. All three of the routes occupy the same ground up to this point, a distance of 7 miles 4,340 feet from Butt mountain. Here the Pacolet line falls into the head of Joel's branch, descending at the rate of 72 feet per mile to Pacolet river, thence down the mountain slopes of the north side of that river, to its intersection with the line near Howard's Gap.

The whole length of this line from Butt mountain is 19 miles 680 feet; maximum grade going east 40 feet, and coming west 72 feet per mile. The minimum radius of curvature will be 630 feet. The approximate cost of construction will be as follows:

|   |              |
|---|--------------|
| Graduation, Bridging and Masonry,.....                                | \$916,700 00 |
| Superstructure, with iron weighing 80 tons per mile,.....             | 133,600 00   |
| Depots, turnouts, water stations, engineering and contingencies,..... | 190,200 00   |
| Total cost,.....  | 1,240,500 00 |
| Average cost per mile,.....   | \$64,690 00  |

The Howard Gap line deflects at Pace's Gap from the Pacolet line, passing through the ridge which divides the waters of Joel's branch and Cove creek, it follows the creek upon an ascending grade of 60 feet per mile to Wolf Pit creek. The inclemency of the weather prevented a further prosecution of the work during the winter.

Field operations were suspended on the 20th of December last and not resumed until the first of June, when the line from Wolf Pit creek was extended to Howard's Gap on level and ascending grades of 30 feet per mile; thence along the slopes and benches of the south side of Tyron mountain, ascending at the rate of 120 feet per mile to Thompson's Gap—the eastern extremity of the mountain division. The length of this line is 17.5 miles. Maximum grade 120 feet per mile

(only used from Howard's Gap to Thompson's Gap).

Minimum radius of curvature from Butt mountain to Howard's Gap, is 630 feet; from Howard's Gap to Thompson's Gap 1433 feet.

The approximate cost of construction will be as follows:

|   |              |
|---|--------------|
| Graduation, Bridging and Masonry,.....                                | \$611,250 00 |
| Superstructure,.....  | 120,000 00   |
| Depots, water stations, turnouts, engineering and contingencies,..... | 181,000 00   |

|                             |              |
|-----------------------------|--------------|
| Total cost,.....            | \$912,250 00 |
| Average cost per mile,..... | \$52,000 00  |

The North Tyron line deflects from the Howard's Gap at Wolf Pit creek. The only advantage to be gained by this route, is a reduction of the grade from the increased length of line which is obtained by its circuit around the end of White Oak mountain, to Thompson's Gap. The length of this line by the survey of the Cincinnati and Charleston Railroad Company is 23 miles 1122 feet. The maximum grade will not exceed 50 feet to the mile. After completing the Howard's Gap line, the corps of engineers moved over to Asheville, with a view of testing the practicability of passing a line through that town and connecting with the line down the French Broad river, below the big bend, at or near the mouth of Reems creek. From the valley of the Swannanoa river (about  $\frac{1}{2}$  mile below the Plank road bridge) the line ascends a small branch at the rate of 52 feet per mile to a narrow gap in the ridge (south of Marcus Erwin's dwelling), where a tunnel 600 feet long will be necessary; thence by Triplet's shops to Tenant's house and Clayton's steam mill to a depression in the ridge near the female College; then upon easy and undulating grades to a gap in the ridge which divides the waters of Beaverdam and Woodfin's mill creek; thence ascending upon a 52 feet grade along the hill slopes of Beaverdam to its mouth above the big bend.

The elevation of the gap in the ridge at the Hill place which divides the waters of Beaverdam and Reems creek was found to be so great, that the ascent to the valley of the French Broad river at or near the mouth of Reems creek could not be effected, maximum grade used 52 feet per mile. Minimum radius of curvature 1433 feet. Average cost per mile \$24,300 per mile.

The superiority of this route over all others for crossing the Blue Ridge, will be readily seen, by instituting a comparison of its grade, its curvature, its cost of construction, and the length of its mountain division, with the same of any other routes yet proposed. The mountain division of the North Carolina Western Railroad is 20.68 miles and is estimated to cost \$148,900 00 per mile. Maximum grade 100 feet per mile. The length to be tunneled is  $2\frac{1}{2}$  miles. The mountain division of the projected line from Greenville S. C. to Butt mountain via Gap creek Gap is  $25\frac{1}{2}$  miles—maximum grade going east 52.8 feet per mile, coming west 70 feet per mile—minimum radius of curvature 573 feet. Cost of constructing  $17\frac{1}{2}$  miles from Gap Creek Gap towards Greenville \$1,287,080 00; average cost per mile \$73,547. From Gap Creek Gap to Butt mountain is not estimated.

There is no real necessity for a tunnel on the whole length of your mountain division, although it might be expedient in some instances to resort to it for the sake of shortening the line. The maps and Profiles of each of the lines surveyed accompany this report, all of which is respectfully submitted.

GEORGE W. PEAKE.

## THE RAILWAYS OF GREAT BRITAIN.

We have been favored by the Railway Department of the Board of Trade with the following Report:

RAILWAY DEP'T, BOARD OF TRADE,  
WHITEHALL, May 27, 1856.

MY LORDS: I have the honor to lay before you the following report upon the proceedings of this department, and the principal points of interest which have come under its cognizance during the year 1855:

### RAILWAY LEGISLATION.

The number of railway bills which came before Parliament in the session of 1855, amounted to 104, and the length of new line proposed to be authorized amounted to 655 miles. But of these bills only 73 were passed; and the total length of line actually authorized was 363 miles.

The following table shows the number of railway acts passed in each session since 1846, together with the length of new lines and amount of capital authorized by those acts:

| Year.     | Number of railway acts. | Length of line authorized. Miles. | Amount of money authorized to be raised. £ |
|-----------|-------------------------|-----------------------------------|--|
| 1846..... | 270                     | 4,538                             | £132,617,263                               |
| 1847..... | 190                     | 1,350                             | 39,460,128                                 |
| 1848..... | 85                      | 371                               | 15,274,937                                 |
| 1849..... | 34                      | 16                                | 3,911,331                                  |
| 1850..... | 34                      | 8                                 | 4,115,632                                  |
| 1851..... | 61                      | 135                               | 9,553,275                                  |
| 1852..... | 51                      | 244                               | 4,333,824                                  |
| 1853..... | 106                     | 940                               | 15,517,601                                 |
| 1854..... | 71                      | 482                               | 9,211,602                                  |
| 1855..... | 73                      | 363                               | 9,192,038                                  |

Of the 73 acts passed in 1855, 53 had reference to the construction of works; the length of new lines authorized by these 53 acts was as follows, viz: 196 miles in England and Wales, 76 miles in Scotland, and 91 miles in Ireland.

The lines authorized in England and Wales were chiefly extensions or branches connected with railways already authorized. The most important were the following:

The extension of the East Kent Railway, from Canterbury to Dover. By this line direct railway communication will be afforded between Dover and the naval and military arsenals in North Kent, as also a shorter line between Dover and the metropolis than is afforded by the Southeastern Railway.

The Newtown and Oswestry Railway deserves notice, as forming a link in a line of railway communication which will probably eventually connect the manufacturing districts with Milford Haven.

The Carlisle and Silloth Bay Railway is an extension of the Port Carlisle Railway to a new harbor on the Solway Frith.

Among the lines authorized in Scotland may be noticed the Glasgow, Dumbarton and Helensburg Railway proposed to be constructed along the north bank of the Clyde, from Glasgow to Helensburg, and the Banff, Macduff and Turriff Railway. The remaining lines were merely short branch lines in connection with existing railways.

In Ireland were authorized an extension of the Dundalk and Enniskillen Railway to Cavan, and of the Ulster Railway to Monaghan.

The Belfast and County Down Railway Company was authorized to make a line to connect Downpatrick with Belfast. A few other short branch lines were also authorized.

As your lordships are aware, the select committee on railway and canal bills in 1853



recommended, and the House of Commons has acted on the recommendation, that with a view to securing uniformity in legislation, a general committee on railway and canal bills should be appointed in each session of a character more permanent than had until that time been the practice, in order to secure a comprehensive review of all schemes submitted to Parliament; and that for the investigation of contested bills the committee should divide the country into districts, settle questions of principle, and make arrangements for uniformity in the decision of questions in which more than one district might be interested; and so direct the investigation of schemes within the several districts as to secure for the public the utmost advantage that might be derived from a judicious combination of new lines with those already existing.

Your lordships caused a general report upon the railway bills of the session of 1855 to be laid before this general committee, in which its attention was called to the following recommendations of the select committee of 1853, viz: first, that running powers should only be conceded in cases where the free transit from one system of railways to another cannot be practically insured by other means; second, that amalgamation between large companies should not be permitted, except under very special circumstances; third, that working arrangements for the conduct of the traffic and the division of the profits should be sanctioned under proper conditions, and for limited periods.

In ten bills application was made for one company to be empowered to run over the line of another company; but in only five cases were these powers granted, and these were cases where it was necessary for one company to pass over a short piece of line belonging to another company, in order to reach a station to be used jointly.

In twelve cases application was made for one company to be allowed to be amalgamated with, or for its line to be transferred to another company; but it was only in seven cases, of small lines closely connected with or subordinate to existing railways, that the applications were acceded to.

The most important class of bills were those in which the company proposed to enter into traffic and working arrangements with another company. Powers of this nature were included in 40 bills, of which 27 bills were passed.

These bills generally provide for the working by a large company of a line of railway in connection with it belonging to a smaller company, the object being to enable one company to make arrangements with another company for the maintenance of the line, the management or the interchange of traffic, and the apportionment of the receipts.

The duration of these arrangements was in every case, except two which involved special circumstances, limited to a period of about ten years; in most cases the act conferred a power to renew the agreement at the expiration of ten years without application to Parliament, upon the approval of your lordships.

The objection of limiting the duration of the agreements, as stated by the select committee of the House of Commons in 1853, was that if the agreement were found prejudicial to the public interests, an opportunity would be afforded of its periodical revision.

Of the bills of this class, the one which proposed to take the largest powers was one for the improvement of the communication

between England and Ireland. It was, however, considerably modified, and the act was limited to enabling the London and North-western, and Chester and Holyhead Railway Companies to raise money for improving the means of conveying the passenger and parcel traffic between Holyhead and Dublin.

There were three bills which bore upon the question of gauge which deserve notice. The diversity of gauge which exists in this country has undoubtedly stimulated mechanical science; but it has been the occasion of a large expenditure, and of frequent contests between railway companies in Parliament, and it causes great inconvenience to that traffic which requires to pass from one system to the other; nor does the mixed gauge, which involves great expense, remove all the evils of a break of gauge.

The first of the three bills proposed to form a company with powers to construct a short narrow gauge line at Reading, to connect the Reading, Guilford and Reigate Railway with the narrow gauge line which the Great Western Railway Company are constructing between Oxford, Reading and Basingstoke.—The line was not judiciously selected, and the bill was therefore not passed. But of the desirability of such a communication there can be no question, as it would form a most important link to connect the system of narrow gauge lines south of London with those north of London.

The other two bills were introduced by the Oxford, Worcester and Wolverhampton Railway Company, with the object of being relieved from the obligation incurred under former acts, of laying down the broad gauge. Of these bills one was withdrawn.

The case of the other bill exhibits the uncertainty which still prevails in the legislation for private bills.

This bill, which involves an important question of principle in railway legislation, was passed by the House of Commons, but was thrown out in the House of Lords.

The proceedings of the House of Commons with respect to the London and Southwestern Railway bill also deserves notice.

It will be in the recollection of your lordships that in 1853 the London and Southwestern Railway Company opposed a bill promoted by the Great Western and Bristol and Exeter Railway companies, for a railway termed the Devon and Dorset Railway; and that this bill was thrown out by the House of Commons, upon a pledge being given by the London and Southwestern Railway company that they would introduce a bill in the following session for a continuation of their line to Exeter.

But, having obtained their object, the London and Southwestern Railway Company repudiated their pledge. Consequently, when the company brought forward a bill for other objects, in 1855, the House of Commons referred the consideration of the bill to a committee of nearly the same members to whom the Devon and Dorset Railway bill had been referred in 1853. This committee inserted clauses into their bill by which the company were bound, under the penalty of a stoppage of their dividends, to introduce into and use their best endeavors to pass through Parliament a bill for a narrow gauge line to Exeter.

It became the duty of the inspecting officers of this department, under a standing order of the House of Commons, to report upon the level crossings proposed in railway bills.

In considering the subject, it is necessary

to bear in mind that level crossings are a source of danger, and that as many as 35 people unconnected with railways were killed at level crossings, and six persons were injured during the year 1855. It may also be observed that level crossings entail a considerable permanent expense on a railway company, from the necessity of maintaining signals, lodges, gates and gatekeepers. It was however, impossible to frame any rules by which the inspecting officers could be exclusively guided in making their reports, as each case involved many special circumstances; but they endeavored as far as possible to adhere to the following general principles, viz:

1. That in all cases where the engineering difficulties would be slight, so that the expenses of erecting a bridge would not materially differ from the sum of the cost of providing and the capitalization of the annual cost of maintaining signals, lodges, gates and gatekeepers, the level crossing could not be recommended, unless the erection of a bridge would, from the general nature of the district, sensibly interfere with the local traffic.

2. That in cases of unimportant roads, where the engineering difficulties and expenses entailed by a bridge would be considerable, the level crossing should be recommended.

3. That in the case of important roads and streets, where the traffic was large, the level crossing should not be recommended, unless the construction of a bridge involved very special difficulties.

The number of level crossings proposed by the bills which became acts, amounted to 237, and of these 102 level crossings were authorized.

In a few cases of thoroughfares, along which a large number of foot passengers passed, but where the traffic of vehicles, &c., was small, the level crossing was retained for vehicles, a bridge being erected for the foot passengers.

The cases in which powers have been conferred upon your lordships by the special acts of last session are 63 in number, and the clauses in which these powers are conferred will be found in Appendix No. 5.

#### DEVELOPMENT OF RAILWAY COMMUNICATION.

The total length of line authorized by Parliament down to the end of 1855 amounted to 14,346 miles; but of this 1,495 miles have been abandoned by subsequent acts, or by warrant under the authority of the commissioners of railways, and consequently there remain 15,851 miles, for which the parliamentary powers which were obtained have not been repealed. Of these 8,280 miles were open at the end of 1855, and 4,571 miles which have received the authority of Parliament remain to be opened.

This length of line is distributed throughout the United Kingdom as follows:

|                    | Length of line open Dec. 31, 1855. | Length of line opened during 1855. | Length of line open Dec. 31, 1855. | Length of line authorized but not open on Dec. 31, 1855. | Total length of line authorized by Parliament to Dec. 31, 1855. |
|--------------------|------------------------------------|------------------------------------|------------------------------------|--|---|
|                    | Miles                              | Miles                              | Miles                              | Miles  | Miles   |
| England and Wales. | 6,114                              | 96                                 | 6,210                              | 3,276  | 9,486   |
| Scotland.....      | 1,043                              | 40                                 | 1,083                              | 458  | 1,541   |
| Ireland.....       | 897                                | 90                                 | 987                                | 837  | 1,824   |
| Total.....         | 8,054                              | 226                                | 8,280                              | 4,571  | 12,851  |

And the following table exhibits for each year since 1843 the proportions of railway authorized, opened and abandoned under the authority of Parliament:







|  | Miles. | Chains. |
|--|--------|---------|
| Dublin and Wicklow, from Shanganah Junction to Bray.....                 | 2      | 0       |
| Oxford, Worcester and Wolverhampton mixed gauge, from Evesham to Campden | 9      | 23      |
| Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield and Goole.....   | 8      | 62      |
| South Devon, from Torquay Junction to Totness.....                       | 7      | 0       |
| Total.....   | 26     | 85      |

The gauge question was brought under your lordships' notice during the year, in the case of the Oxford, Worcester & Wolverhampton Railway. This company were required by the 19th clause of the act 17th and 18th Vic., cap. 207, to complete the northern portion of their line by the 31st May, 1855, as a double line upon the broad gauge, and the remainder by the end of the year. It has been already mentioned that this company introduced two bills into Parliament with the view of relieving themselves from this obligation; but these bills did not pass, and, as the company had taken no steps to complete the railway, it had rendered itself liable to heavy penalties. In the month of September, 1855, the Great Western Railway Company called upon your lordships to enforce the completion of the broad gauge; and at an interview which took place between the two companies and your lordships, it was agreed that the Oxford, Worcester and Wolverhampton Railway Company should apply to Parliament in the session of 1856 for further time to complete the line, power to raise a further sum of money, and relief from the penalties already incurred.

Your lordships granted to the Great Western Railway Company an extension of time for six months for the completion of the Bathampton branch of the Wilts, Somerset and Weymouth Railway.

In four instances your lordships have been called upon to make regulations at level crossings, and of these three have been level crossings of important thoroughfares, traversed by a large traffic.

In two other cases of level crossings, viz: the Chipping Norton branch of the Oxford, Worcester and Wolverhampton Railway, and the Mullingar and Longford branch of the Midland Great Western Railway, level crossings had been constructed in lieu of bridges, as required by the acts of the companies.

In the first case the company gave an undertaking that the bridge should be completed within a specified time.

In the latter case the company did not consent to erect a bridge until your lordships had been under the necessity of giving the company notice of your intention to take legal proceedings.

The particulars of these cases, as well as those in which your lordships interfered with regard to screens, &c., will be found in Appendix No. 2.

Your lordships were called upon to direct an inspection of the Eastern Counties Railway, under the provisions of the act 3d and 4th Vic., cap. 97.

From the inspecting officer's report it appeared that the permanent way was in a dangerous condition, and that several of the bridges were in an advanced state of decay. The act under which your lordships are empowered to order a railway to be inspected, leaves with the company in whom the management of the line is vested, the responsibility of removing any source of danger which may be pointed out.

In the case in question the company informed your lordships that they were taking steps to repair the line.

In pursuance of powers conferred upon your lordships by the special acts of the companies your lordships' approval was requested to working agreements between the Edinburgh and Northern Railway Company and the Leven Railway Company, and between the Scottish Central Railway Company and the Perth and Dunkeld Railway Company.

As regards the first of these agreements, a long correspondence ensued between your lordships and the parties, upon the proposed duration of the agreement, which was longer than that recommended by the Select Committee of the House of Commons on railway and canal bills for 1853. Meanwhile the interests of the Leven Railway Company in the maintenance of the agreement appear to have been modified, and the application for approval was withdrawn; the agreement also contained a clause by which the development of the traffic of the port of Leven might have been injuriously affected.

It has been already observed that agreements authorized by Parliament, by which one company undertakes to work the line of another company, or by which the interchange of traffic is facilitated, are becoming very numerous.

In the case of six distinct lines of railway opened during the year 1855, the lines were to be worked, under parliamentary authority, by a company owning a line in connection with them; and seven other companies appear to have entered into working arrangements without the sanction of Parliament, viz:

The East Grinstead Railway is worked by the London, Brighton and South Coast Railway Company, without there being any special power in the company's act.

The Wimbledon and Croydon Railway is worked by the London, Brighton and South Coast Railway Company, the act having authorized the company to enter into arrangements with the London and Southwestern Railway Company.

The Bideford Extension Railway is worked by Mr. Brassey, the act having authorized the company to enter into arrangements with the North Devon Railway Company.

The Coleford, Monmouth, Usk and Pontypool Railway is worked by the Newport, Abergavenny and Hereford Railway Company, the act having authorized the company to use a portion of the Newport, Abergavenny and Hereford Railway.

The object of these working arrangements is to create that identity of interest between the several companies which is caused by an amalgamation; but whilst they place the working of the small line under the control of the larger company, they appear to provide a better security that the local traffic of the smaller line will be more cared for and developed than if it were entirely merged into the larger concern.

These agreements are generally framed in such a manner as to render it the direct interest of the company working the line to develop its traffic.

There is another class of agreements between railway companies which do not come before the legislature, and which have been devised with a view to produce the same effect as amalgamation, in preventing competition between railway companies.

Under this class of agreements the railway companies, parties to them, divide in fixed proportions the receipts from the traffic between certain specified places, after deducting a sum for working expenses; and since

each railway company that is a party to the agreement derives its share of the receipts although another company may have done the work, this arrangement possesses the evils of a monopoly, without furnishing to the railway companies that stimulus to continued exertion in developing the traffic which exists in the case of companies working the traffic on their own account, and the absence of which is in the end injurious both to the public and the proprietors. Some agreements of this nature have contained a clause binding one of the parties to discourage traffic brought by an independent railway, which might compete with the traffic of one of the other parties to the agreement.

An important agreement of this class recently entered into is one between the London and Northwestern, the Lancaster and Carlisle, the Caledonian, the Midland, the Great Northern, the Northeastern, and the North British Railway Companies, by which the receipts from all traffic between London and certain towns in England, and Edinburgh, Glasgow, and other districts in Scotland to the north of those towns, are paid into one fund, and divided in certain fixed proportions.

Your lordships have been called upon to approve by-laws for the following railway companies during the year 1855, viz: Ballymena, Ballymoney, Coleraine and Portrush; Bedale and Leyburn; Glasgow and Southwestern; Great Western and Oxford, Worcester and Wolverhampton, joint station at Wolverhampton; Irish Southeastern; Lancashire and Yorkshire and East Lancashire, joint line and stations; London and Southwestern; Monkland; Peebles; Scottish Midland Junction; Thames Haven. Those cases in which a departure from the usual form has been sanctioned will be found in Appendix No. 2.

The length of new line reported to be in course of construction on the 30th of June, 1855, was 880 miles; of these about 170 miles were opened before the 31st of December, 1855.

The number of persons employed on the 30th of June upon the railways in course of construction amounted to 35,546, being on the average 43.8 per mile.

With the view of affording some measure of the comparative progress of railway enterprise, the following table has been prepared, showing the number of miles of railway in course of construction in each year since 1848, and the number of persons employed thereon, together with the amount of money received and the number of miles of railway opened during the year:

| Year.           | Lines in course of construction. |                                 |                                       | During the year..... | Money raised by shares and loans ..... | Miles of railway opened during the year ..... |
|-----------------|----------------------------------|---------------------------------|---------------------------------------|----------------------|--|---|
|                 | Miles.....                       | Number of persons employed..... | Average number employed per mile..... |                      |  |   |
| May 1, 1848..   | 2,958                            | 188,177                         | 63.6                                  | .....                | .....                                  | .....   |
| June 30, 1849.. | 1,504                            | 103,816                         | 69.0                                  | 1849                 | £29,574,719                            | 869   |
| June 30, 1850.. | 864                              | 58,884                          | 68.15                                 | 1850                 | 10,522,967                             | 625   |
| June 30, 1851.. | 734                              | 42,938                          | 58.49                                 | 1851                 | 7,970,151                              | 269   |
| June 30, 1852.. | 738                              | 35,935                          | 48.69                                 | 1852                 | 15,924,783                             | 446   |
| June 30, 1853.. | 682                              | 37,764                          | 55.36                                 | 1853                 | 9,158,885                              | 350   |
| June 30, 1854.. | 889                              | 45,401                          | 51.07                                 | 1854                 | 12,452,374                             | 268   |
| June 30, 1855.. | 880                              | 38,546                          | 43.80                                 | 1855                 | 11,514,490                             | 243   |

The length of line open for traffic in the United Kingdom on the 30th of June, 1855 was 8,116 miles, and the number of persons



employed thereon amounted to 97,953 persons, or 12.07 per mile. This, as appears from the following table, is a larger number per mile than have been employed in any year since 1848:

| Year.            | Lines Open for Traffic. |                                      |                                   |         |                  |
|------------------|-------------------------|--------------------------------------|-----------------------------------|---------|------------------|
|                  | Miles.                  | Number of persons employed per mile. | Average number employed per mile. | Number. | Number per mile. |
| During 1848..... | 4,252                   | 52,628                               | 12.3                              | 1,321   | .31              |
| During 1849..... | 5,447                   | 55,968                               | 10.2                              | 1,250   | .23              |
| During 1850..... | 6,308                   | 60,325                               | 9.56                              | 2,030   | .32              |
| During 1851..... | 6,698                   | 63,566                               | 9.49                              | 2,107   | .31              |
| During 1852..... | 7,676                   | 67,601                               | 9.55                              | 2,253   | .31              |
| During 1853..... | 7,512                   | 80,409                               | 10.7                              | 2,463   | .32              |
| During 1854..... | 7,803                   | 90,409                               | 11.59                             | 2,410   | .30              |
| During 1855..... | 8,116                   | 97,952                               | 12.07                             | 2,798   | .34              |

Table No. 1, in Appendix No. 7, shows the several classes to which the persons employed belonged.

**LIABILITIES OF COMMON CARRIERS.**—A case was tried yesterday morning before Esq. Rædeter, in which Christian Gabriel was the complainant, and the Little Miami Company the defendants. Six packages of household goods were placed in the hands of the officers of the Baltimore and Ohio Railroad at Baltimore, for delivery in this city and a receipt taken therefor. Four of the packages were delivered, but the other two, which were of the value of \$7 50, could not be found. The Little Miami Company held that the Baltimore Company, and not they were the responsible parties. In summing up the case, Esq. Rædeter said he must decide for the plaintiff, on the ground that when a line of road is made up of a number of links, each division may be held responsible for the non-delivery of freight received on other branches of the road.

**THE TRUE MISSION OF THE RAILROAD.**—A recent article on "the Mission of the Railroad," contains the following suggestions, which are eminently judicious, and which, judging from the poor provisions made for the branch of travel alluded to, have been little thought of by the managers of Railroad Companies in this vicinity:

"The Railroad as the great civilizer, never can fulfil its mission until it gives to all the inhabitants of cities an easy access to the green fields, running waters, pure air, sunshine and shadow of rural life; until it has put it in the power of every man, woman and child to look daily into the heavens from pillared aisles of forest sanctuaries. The railroad system is only in embryo until it enables every man to "sit under his own vine and fig tree" gives to each family its acre, in giving the means of transport to and from places of employment; and when a majority of the people go daily by rail to or from their places of residence and business, every day will be busier than our excursion days are now."

**PITTSBURG, FT. WAYNE & CHICAGO R. R.**  
—The new company formed by the consolidation of the lines between these points has been organized and the following gentlemen elected directors:

Pennsylvania—Geo. W. Cass, Wm. Wade, Gen. Wm. Robinson, jr., J. Edgar Thompson.  
Ohio—R. McKelly, C. T. Sherman, C. M. Russell, John Larwell.

Indiana—Samuel Hanna, J. K. Edgerton, A. L. Wheeler, W. Williams.

Chicago—Wm. B. Ogden, John Evans.

New York—Theodore T. Moran.

The vote polled was large, being of the Ohio and Indiana 25,086 shares, Fort Wayne 17,970 shares, and of the Ohio and Pennsylvania, 44,173 shares.

The new board subsequently elected Geo. W. Cass, Esq., of Pittsburgh, as President, and J. K. Edgerton, of Fort Wayne, Vice President.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ANAMS, and our selections of Type are sufficient to suit every taste.

BOOKS. STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, SEPTEMBER 2, 1856.

### RAILROAD RECORD.

D. MANSFIELD..... EDITOR.

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, ----- TUESDAY, SEPT. 2, 1856.

#### PROSPECTS OF THE TEXAS WESTERN R. R.— COST.

It is known to most of our readers that the Texas Western Railroad Company was formed with a view to the construction of a railroad through Texas to the Pacific. The route selected is from the western boundary of Louisiana, near Shreveport, to El Paso, on the Rio Grande, and thence to San Diego, on the Pacific. With this view the most careful surveys have been made by Col. A. B. Gray (the results of which we have heretofore published), and likewise on very nearly the same route, by the Government Surveyors. Desiring to form some estimate of the future value of the Texas Western Railroad stock—the company having actually commenced their work—we shall compare these surveys and estimates, and likewise furnish all the facts necessary to form an opinion on this subject.

1. IN REGARD TO THE ROUTE AND COST. The route surveyed by the Government Engineers was from Fulton, Arkansas,—quite near Shreveport—to San Pedro, north of San Diego. This route is a little north of Col. Gray's; but both answer substantially to the parallel of the 32° of latitude. Both these surveys cross the Rio Grande at or near El Paso. The results of the government surveys are as follows:

##### GOVERNMENT SURVEY.

|                                      |              |
|--------------------------------------|--------------|
| Fulton to San Pedro.....             | 1,618 miles. |
| Cost.....                            | \$68,970,000 |
| Cost per mile.....                   | 42,000       |
| Distance from Fulton to El Paso..... | 780 miles    |
| Cost.....                            | \$39,000,000 |

This route is either more difficult than the lower line, selected by Col. Gray, or (as the Secretary of War's Report suggests) is overrated. The latter is most probable. The cost can hardly exceed \$40,000 per mile, as there are no uncommon difficulties in the way.

##### COL. GRAY'S SURVEY.

|                              |              |
|------------------------------|--------------|
| Shreveport to San Diego..... | 1,624 miles. |
| Cost.....                    | \$44,470,674 |
| Average per mile.....        | 28,000       |
| Shreveport to El Paso.....   | 783 miles.   |
| Cost.....                    | \$19,628,366 |
| Average.....                 | 25,069       |

We put both these statements together, in order to show that the highest and lowest estimates made of this route, by competent engineers, who have been over the whole ground, come within moderate limits. We suppose the truth to lie between, and that the Texas portion of the Western Texas Road

may be made for about \$35,000 per mile, which will require for 783 miles about \$27,000,000. We assume this, then, as a very safe basis for a calculation of the value of stock.

In this estimate we are looking only to the Texas line from the Mississippi river to El Paso; for we think it beyond a doubt that if a railroad from the Mississippi (and consequently from every part of the United States) to El Paso, were actually made, that this route would unquestionably secure all the Panama and overland routes we now have, of commercial traffic. With this view we shall now consider the prospects of the Texas Western Railroad, and the value of its stock, as confined entirely to Texas.

2. IN REGARD TO THE MEANS AND RESOURCES OF THE COMPANY. This company has a complete, unrestricted charter to make a railroad through Texas to El Paso, without any limitation as to time or manner, except in regard to the commencement and work per annum, which was limited to a certain period and certain amounts. The Legislature of Texas, however, at its present session, has extended the time, on account of the difficulty of procuring iron at the season of low water. The contractors are at work with a large force, and several miles graded. The extension of time will enable them to comply with the terms of the charter, beyond a doubt. We must now look to the means of the company, in order to estimate properly the prospects of completing the road, and the value of stock:

First, By the charter of February 16, 1852, the road has *eight* sections of land per mile. Under the Act of the 30th January, 1854, sixteen sections were granted; but as it is liable to the construction that sixteen sections is the limit of any road, we assume this as all the Western Texas Company is entitled to. In addition to this grant, the Legislature of Texas, at its present session (July, 1856), has granted a loan of \$6,000 per mile to railroads, on certain conditions—that it shall be applied to the iron, &c. Independent, then, entirely, of any stock subscriptions, the Texas Western Railroad has these means. We estimate the value of the Texas lands (being on the line of the railroad) and sold only, as the road is completed to them, at \$3 per acre. This is much lower than any other estimate we have seen. It is less than *one-third* the value (by actual sales) of the lands of the Illinois Central Railroad. The means of the company, then, stand thus:

|   |              |
|---|--------------|
| 10,241 acres of land on each mile of 783 miles,<br>at \$3 per acre..... | \$24,053,761 |
| \$6,000 per mile for superstructure.....                                | 5,398,000    |

Aggregate present means.....\$29,451,760

It will be seen that this considerably exceeds the whole estimate of cost, as we have made it above, by taking a medium between the estimates of different Engineers. Our estimate is *eight millions above that of Col. Gray*. Our estimate of the value of the lands is *below* that of any others which have been made. With these facts before them, we must believe that any company of sagacious operators or financiers, however careful or timid they may be, will agree with us *that the whole Texas Western Road may be made to El Paso for less than the means now at the command of the company*. If this be true then nothing more will be required of the company than a small assessment to pay the annual interest on moneys borrowed in advance, at the commencement of the work, in order to save the lands till the road reaches them. The company will then have their whole road completed and running, from the Mississippi river to the Rio Grande, through the finest climate and one of the best regions of the world, *for almost nothing*. If the estimated cost and value of lands made by others be correct, they will have a large surplus. We think one fact perfectly certain, that the company now has means to furnish 780 miles of railroad *without cost to the stockholders*. If this be true, what is the value of the stock!

3. OF VALUE OF THE STOCK. It is perfectly well known that there are now 70,000 passengers per annum between California and the Atlantic:

|   |             |
|---|-------------|
| Which, on 780 miles, at \$40 each, gives.....                   | \$2,800,000 |
| 20,000 passengers increase by the construction of the road..... | 800,000     |
| 100 way passengers per day, in Texas, at \$10 each.....         | 360,000     |
| Mails.....  | 500,000     |
| Specie, freight on \$50,000,000.....                            | 500,000     |
| Freight, estimated in gross.....                                | 1,500,000   |

Aggregate.....\$8,460,000

In order to meet all the contingencies of expenses on this route, we will suppose them to be 65 per cent., or nearly  $\frac{2}{3}$  of the whole receipts..... 4,199,000

|                          |              |
|--------------------------|--------------|
| Net profits.....         | \$2,261,000  |
| Cost.....                | \$27,000,000 |
| 8 per cent. thereon..... | 2,160,000    |

According to our figures, then, this road to El Paso will yield 8 per cent., and leave a surplus. We desire this estimate to be thoroughly scrutinized; for we believe the estimate of the cost is full high enough, while that of the business is underrated. No man, we think, acquainted with the influence of railroads on lands can doubt that we placed the value of the land grant quite low enough. If, then, these estimates are true, or anything



like it, the *intrinsic* value of Texas Western Railroad stock is much *above par*; for it will be seen the contribution in money of the stockholders, must be very small. The company have been issuing stock at only 5 per cent., on the supposition that this will be all the money required; but in this we hold they are unjust to themselves. No stock ought to be issued at such low rates; but an advance made to something like the present value of the stock. We give the above view of the case as the only one we can take, and the only one which corresponds at all with the state of facts.

#### THE COMMERCIAL YEAR AND ITS RESULTS.

Less than two years since, in the fall of 1854, there was a financial crisis, and a general depression of credit and business in the west. This was especially the case with railroads. Stocks, bonds, and receipts, all went down. The crops were short; trade had been overdone; and for a time it seemed as if there would be one of those great breakdowns which would be felt for years. Cincinnati and St. Louis, owing to the failure of numerous private banks, were two focal points of this financial disaster, and here there were not a few who thought the prosperity of this flourishing city was seriously and permanently checked. Our readers will recollect that we were no believers in this doctrine; but on the contrary affirmed that the storm was temporary, and that the elements of continued growth here were even greater and stronger than ever before. The results of the last two years' operations we think prove the truth of our position. We shall refer to two evidences; first, the increase of railroad business; and then to the increase of general commercial business.

*First*—in reference to railroads. We need enter into no special details, beyond this general one, that the leading western railroads have increased in the past year about 25 per cent; an increase for a single year quite remarkable. The increase makes, in about twenty roads, *about five millions of dollars*; and when we look to the result in the whole country, it is an increase of railroad means beyond the most sanguine estimates ever made. The basis of this increase is in general the increase of *freights*. This again is caused by the increase and increased movement of produce. Now, let it be remembered that although there was a partial failure of crops in 1854, and a general depression of business, yet in the current commercial year ending with the summer of 1855, there was no positive decline in railroad receipts. Railroad business *maintained its own in the year 1854-5*. This was our worst year of railroad experience. We have now come to the end of another commercial year, and as we before remarked, there is an *increase of twenty-five per cent. in railroad business*. As this is

chiefly caused by the increase and movement of domestic produce, we will examine—

*Secondly*—the results of the *commercial business of the year*.

The Cincinnati *Price Current* furnishes us the Imports and Exports of Cincinnati to the last week of the year 1855-6. We avail ourselves of its columns to show the results of commercial business in the last two years. We must premise that the commercial business of Cincinnati did not fall off in 1854-5; it remained about stationary. But in this year it has increased greatly, as we shall see by the following exhibits:

#### 1. IMPORTS OF PRODUCE AT CINCINNATI.

|                     | 1854-5. | 1855-6.   |
|---------------------|---------|-----------|
| Apples, bbls.....   | 15,673  | 31,499    |
| Butter, bbls.....   | 10,049  | 11,129    |
| "    firkins.....   | 6,970   | 12,268    |
| Corn, bushels.....  | 821,962 | 948,292   |
| Cheese, boxes.....  | 170,660 | 184,377   |
| Eggs, bbls.....     | 11,880  | 14,054    |
| Flour, bbls.....    | 323,131 | 520,069   |
| Wheat, bushels..... | 261,934 | 1,044,547 |
| Hay, bales.....     | 37,445  | 41,415    |
| Hogs, head.....     | 349,957 | 447,676   |
| Seeds, bbls.....    | 36,221  | 24,500    |
| Tobacco, hhds.....  | 5,168   | 5,583     |
| "    kegs.....      | 23,845  | 32,415    |
| Whisky, bbls.....   | 267,493 | 358,050   |

The reader sees at once that the ratio of increase is very large. The *increase* of value in these articles alone, exclusive of others, amounts to at least *four millions of dollars*. We may add further that this is by far the largest amount of produce of *these articles* ever imported into Cincinnati, proving that the commercial business of Cincinnati is as flourishing as it has ever been, and still rapidly growing.

#### 2. EXPORT OF MANUFACTURES AND MERCHANDISE.

|                            | 1854-5. | 1855-6.   |
|----------------------------|---------|-----------|
| Alcohol, bbls.....         | 19,437  | 31,048    |
| Candles, boxes.....        | 138,279 | 191,116   |
| Iron, pieces.....          | 590,905 | 847,896   |
| "    bundles.....          | 62,248  | 89,965    |
| "    tons.....             | 11,778  | 11,766    |
| Lard Oil, bbls.....        | 43,088  | 55,534    |
| Soap, boxes.....           | 33,802  | 41,668    |
| Merchandise, packages..... | 788,325 | 1,109,744 |
| "    tons.....             | 7,697   | 9,294     |
| Manufactures, pieces.....  | 342,389 | 232,594   |

We need not pursue these details farther. It is most obvious that the commercial business of Cincinnati, for the year that is past, has been greatly enlarged. It is true that the commerce in some articles, such as sugar, molasses and coffee, has rather diminished; but so it has in the whole country. The fact is, the crops of these articles in the countries where they are produced have diminished, and the prices are very high. In *value* the trade in groceries exceeds that of last year.

The general facts we have here given in relation to railroads and commerce, show that not only the whole loss, or rather check of the year 1854-5 has already been recovered, but far surpassed in the year 1855-6. In the year to come we may safely count on a large and profitable business in all branches of trade, commerce and manufactures. The crops of 1856, if not very large, are certainly fair; and the railroad business of 1856-7 will certainly be increased.

From the Harrison Flag.

TO HIS EXCELLENCY E. M. PEASE, GOVERNOR OF THE STATE OF TEXAS.

Sir :—In reviewing your message vetoing "An act to amend the caption and first and sixteenth sections of an act to incorporate the Texas Western Railroad Company," I, with many others of our citizens, have been amazed at the gross injustice attempted to be heaped upon this company by the Executive of the State. You have not presented just and proper objections to the *amendment* asked by the company, but have employed the occasion offered, in violation both of the duty and dignity of your office, to make war upon the *charter* by exaggerating its provisions, and upon the company by falsifying its history. Your zealous hatred to the Texas Western company and your deep seated prejudices to Eastern Texas and the corporate system, will afford but a slight excuse to the Chief Magistrate of a State, for such a mode of warfare, as you have employed in your message. You have taken "*general notoriety*" as your authority for facts, and you have been betrayed, by that authority, into both a suppression of truth and a declaration of falsehoods.

I will not, through regard to Texas, charge her Governor with a willful official propagation of falsehood, but your ready credence to general rumor and your promptness to act upon its authority, when facts could have been easily obtained, prove that your proclivities to truth are not insurmountable when falsehood better serves your purpose.

As the ground of your first objection, you state the following as facts: "that most, if not all, its elections for Directors and officers, except the one held since this act has been pending, has been held out of the State, and that a large majority of its Directors are non-residents." The subjoined certificate shows that there is not a trace of truth in this statement. The certificate will speak for itself—I will not enumerate the points which it establishes—but will add that you were in possession of the By-laws of the company, adopted last April, the second of which requires that "a majority of the directors *shall be citizens of Texas*," after the first Monday in October next.

Your second objection to the amendment is, "that *it* (the amendment) does not limit the time within which it shall be required to survey and sectionize the reservation of land granted by its *original charter*." The point in this objection seems to be, that the company may take an indefinite time to construct their road, and consequently an indefinite time to survey and sectionize their lands; your fruitful imagination has defined the indefinite time to fifty or one hundred years. Had the original charter been before you for your approval, and were men destitute of the instincts of self interest, then your objection would have been both appropriate and sensible. The assumption upon which this objection rests—that a railroad company will oppose its own interests, is simply an absurdity, too glaring to have been committed by a candid and intelligent mind. In connection with the objection you state, "the company is not even required to make a record of the designation of the track, either in the General Land Office or any District Surveyor's Office, so that the public can ascertain its locality." If you were honest when you made this assertion, then are you ignorant of the laws which you are sworn to execute. In refutation of your statement I refer you to "an act to regu-



late Railroad companies," sec. 21., approved February 7th, 1853, which requires every Railroad company to file, in the General Land Office, and in the offices of the County Clerk and District Surveyor of every County through which the road passes, a map and profile of the same, and "a certificate specifying the line upon which it is proposed to construct the road," and "to remain there a record forever." Your ignorance of this "Act" would be a violent assumption, because at the very date of your veto message, you caused to be forwarded to the President of this company, in conformity with the 18th section thereof, certain interrogatories relating to its operations and condition. The probabilities of the case place you on the other horn of the dilemma.

After two objections, your message refers to the *objects* intended to be effected by the amendment. The first is merely a change of name. In the abundance of your generosity, you admit, "a rose will smell as sweet by any other name," that there seems to be no objection to the change.

You assert that "the second object of the amendment is, to make legal all the acts heretofore done by the company, and to declare such acts legal and binding on all parties connected therewith. What acts this is intended to legalize, I have no means of knowing; but if it is intended to legalize the sale that is generally understood to have been made of this charter, to a company organized under the laws of another State, I am unwilling to sanction any such proceeding."

When a charge of this grave import is made, it becomes necessary to explain what are the provisions of the amendment sought by the company, which you have thought proper to veto. The first object of the amendment is simply a change of name, as you have conceded. The only other object contemplated by the amendment, is, to relieve the company from any forfeiture *by their failure to lay the iron on the first ten miles of their road by the 16th of February next.* This amendment had its origin in this place, in December last, and was suggested by a stockholder in the road, an intimate and distinguished friend of yours, whose opinions you could not fail to respect. It originated with an actual resident of the State, who had done service for the "Lone Star," when you were yet eating cud-fish in Hartford, Connecticut. The facts which suggested the amendment were these: Red River had not been navigable for nearly two years, and upon its navigation depended the possibility of getting iron for the track. It could not certainly be known that it would rise sufficiently early for our purposes, and prudence suggested the amendment asked. When it was recently in a navigable condition, our company used all diligence to have the iron shipped to a point near the road; they were however unsuccessful, and the iron is now stored in New Orleans, awaiting shipping to Port Caddo. The river is unprecedentedly low, and to haul the iron from the Mississippi River to this place, *if it were a physical possibility*, would be "an onerous task;" it would cost the company not less than \$80,000, and when arrived and laid on the road, would be of no practical utility, as our road has no connection at present East. The only purpose it would subserve would be to estop the malignity of an Executive, who is waging an exterminating war against the company. These are the only objects sought to be accomplished by the amendment, and are, to all unprejudiced minds, reasonable and proper, although

the company has been organized several years. It would have been folly to purchase iron in advance of the grading of the ten miles, as the interest on its cost would have been a dead loss. No company in the Union has capital sufficient to transport this iron from the Mississippi River to this place, under the circumstances existing in the country. It would be, not only "an onerous task," but a physical impossibility. These two objects are all that was intended to be effected by the bill which you have vetoed: your charge, that it was designed to legalize anything, is gratuitous and false. The acts of the company have at all times been legal, and do not require legalization. The indirect charge of the sale of the Texas Western charter specified by you as one of the acts intended to be legalized, like the rest of your declarations, is without foundation in truth. Your favorite witness—"general notoriety"—gives you the reputation of having been a lawyer from the time you left Hartford, Connecticut, to the present. You should therefore have known that stockholders cannot sell a charter. The original corporators of the company, (with a few exceptions who never took stock) are still stockholders of the company, which never has nor ever can be governed by any other laws than those of Texas. The subjoined certificate will explain both the nature and object of the transaction which you have falsely described as "a sale of charter."

You next state "I trust it will not be considered out of place here, to allude to some facts connected with the organization and management of this company." As usual "general notoriety" is the author of the facts you enumerate. It is difficult to decide, whether, in the enumeration, you betray most ignorance or malignity. It is true that "the Texas Western company did file in the General Land office, a designation of their route and reservation, nearly on the 32 deg. N. lat.," and this was done during the pendency in the legislature, of the act to provide for the construction of the Mississippi and Pacific charter. It is not however true, "*nor can it be true*, that they made use of the same to control the location of the last named road, because the route of this road was fixed by the charter itself, and there never has to this day been any location on the route under the last named charter. The Texas Western charter was passed nearly two years before the Mississippi and Pacific, and even you will not deny to the Texas Western company the right to locate their route "by survey, recognition or otherwise." The second "fact" which you state, in this connection, in regard to the sale, has already been proven false.

You charge further that the Texas Western company "have endeavored to defeat the favorite policy of the State, the securing the construction of the Pacific road across our territory under the act passed for that purpose." Upon this point Doctors disagree widely. If a deadly, continued and uniform opposition can give any indication of an attempt to defeat this favorite policy of the State, sentence of "guilty" would be branded upon the forehead of His Excellency E. M. Pease, his friend Lorenzo Sherwood and other coadjutors in the vicinity of Galveston, of which section you are peculiarly the Governor.

I would not do justice to the printer, were I to dwell further upon the various rumors you have collected and embodied in your singular, unstatesman-like, inconsistent and malicious message. My object has been to correct the falsehoods you have propagated,

whether accidentally or willfully, and will leave to the people to determine whether you have erred through ignorance or design.

W. R. D. WARD.

We the undersigned, citizens of Harrison County, and original stockholders in the Texas Western Railroad Company, do hereby certify that this company was organized, and Directors and officers elected in Tyler Smith County in compliance with its charter. That all of its directors and officers were Texans, and that the company has held only two elections since that time, the last one being in Marshall this year, and that there has never been "a large majority of its directors non-residents of this State," but on the contrary, there being at all times a majority living in this State,—including T. J. Green who claims Texas as his home, and we know him to be an old Texan. We further certify that we have not sold, nor do we believe we could sell this charter, but we did sell, or transfer our stock to other parties, not for the sum of \$600,000, but for the nominal sum of \$400,000 in the stock of another company, or in the one that should build our road, and with a view only to insure its construction; and of said \$400,000, we have received, and are willing to receive, stock in the company as per agreement in the 5 per cent stock, amounting in the aggregate to \$20,000 only, or its cash equivalent. Given under our hands in Marshall, this the 20th of July, A. D. 1856.

|                                     |                  |
|-------------------------------------|------------------|
| W. R. D. Ward                       | S. J. Richardson |
| Geo. B. Adkins                      | Geo. W. Vivion   |
| T. A. Patillo                       | R. P. Brown      |
| M. J. Hall                          | Wm. M. Taylor    |
| Joe. M. Taylor                      | V. H. Vivion     |
| J. M. Morphis                       | E. Greer         |
| John S. Wilson                      | F. Hall          |
| J. M. Curtis                        | Jos. Mason       |
| J. M. Curtis, agent for J. L. Curry |                  |
| Pierce, Curtis & Taylor             |                  |
| Jacob Fisher                        | Benj. F. Young   |

B. Smalley.

The Austin State Gazette, and State Times will please copy the above communication.

W. R. D. W.

Marshall, July 29, 1856.

From the Harrison (Texas) Flag.  
**TEXAS' BRIGHT AND DARK SIDE.**

NUMBER FOUR.

Marshall, the seat of justice of Harrison county, is situated on the dividing ridge between the Sabine on the Southwest and Lake Caddo on the Northeast. By a late act of the Legislature, the town was incorporated under the name and style of the "CITY OF MARSHALL," with a provision for the election of a Mayor, five Aldermen, Treasurer, Recorder, Clerk of the Council, and Constable, and as many other subordinate officers as may be necessary for the preservation of the peace and good order of the city—these officers have been elected and qualified, and the good people of Marshall are now enjoying the blessings arising from the administration of municipal government.

The limits of the corporation are one and a half miles square, of which the Court House is the center. Population about 2,500. The town proper is built upon rising ground, and commands a pleasant and varied prospect of the surrounding country. The public buildings are the Court House, Marshall University, Masonic Hall, County Jail, and four



churches. The private dwellings are mostly frame buildings, light and airy, built with particular reference to the mild climate in which they are situated. There are however some exceptions in which brick are used, combining solidity of structure with architectural grace and elegance. The public edifices, except the churches, are of brick, highly creditable to the enterprise of the citizens, as well ornamental to the town. The Masonic Hall indicates that the true spirit of Masonry is prevalent among the craft in this vicinity, for they have erected, finished and furnished the finest and most expensive building of the order in the State. There is a lodge of 100 Master Masons and a Royal Arch Chapter and Council, all in a flourishing condition.

The I. O. O. F. are also prospering and highly respected as an order, their lodge numbering eighty members of the Scarlet Degree. The I. O. G. S. & D. of S. is perhaps increasing in members and respectability more rapidly than either of the other orders, which speaks well for the cause of temperance in this place, their lodge already numbering more than one hundred members. The public schools have just closed their session and will not open again until the heat of summer has passed. There are about 225 pupils who attend the schools at this place, one half of whom are attached to the Masonic Female institute. This, as its name denotes, is under the care and guardianship of the Masonic Fraternity, and its late annual commencement under Prof. Wilson, gives satisfactory evidence of the high attainments of the graduates, and a sure guarantee to parents and guardians of the excellence of the institution.

The professions of law and medicine are well represented, there being thirty of the former and half of that number of the latter. The Holy Orders are not as well personated, still there is a respectable number of clergy residing in the place.

The employments of the place embrace almost every branch of national industry. The whole number of manufacturing establishments is twenty-six; of these, one is engaged in manufacturing plows and making castings of iron, two in fabricating carriages and wagons, one in building cotton-gins, three in cabinet furniture, and the remainder distributed over a variety of handicrafts. There are two weekly newspapers published in the city; *Texas Republican* and *Harrison Flag*, the former Dem. and the latter American; so far as mechanical execution is concerned, both are respectable. There are two hotels and a number of private boarding-houses. The hotels are large old frame-buildings, devoid of the comforts and conveniences of modern improvements, and although paying the usual attention to their guests and spreading before them a rich table of the luxuries of Texas, generally fail to meet the expectations of the travelling public.

There are two livery stables. One has a world wide reputation as the *Mammoth Stable*, the other is an extensive new brick, which can hardly be said to have opened yet, but will in a few days, furnish the "fast boys" with "two forty" nags and throw down the gauntlet of competition for the mammoth to take up. There are four tri-weekly lines of stages coming into the place, making this a night stand; these bring the mail from different points, which with some half dozen pack mails afford the mail facilities of the place.

In a commercial point of view, Marshall holds a conspicuous station in the front rank

of inland towns. She has over twenty Stores, mostly Dry Goods, though mixed, combining every variety of provisions and family supplies. There are also two large fine Drug Stores, supplied with an ample stock of every thing in their line. There are eleven public roads radiating from this point; these are the common primitive earth roads, and through these highways of trade and channels of commercial intercourse flows, in one continued stream, the peculiar institutions of Texas—"the ox team and teamsters"—for long years they have been the pride and glory of Texas. Whatever else may have been dispensed with, as instruments of its prosperity, they were indispensable; they occupy the intermediate ground between the merchant and planter, without which both commerce and planting are at a stand; they hold a position in this great and growing State second to no other interest, and stand in the same relation to the general prosperity that railroads do in Georgia and Ohio. They know their position, feel their importance, and at all times fall back upon their reserved rights. The highway as a matter of undisputed right belongs to the ox team, and woe to the buggy, carriage or stage coach that has the temerity to claim a moiety of the public road. If they do not enact the statutes of our country, they set the laws of the land at defiance; they have no desire to make improvements in their trade or calling, and give no countenance to those useful inventions devised by others; they spurn at the discoveries of science, as impositions on the credulity of mankind and contrary to reason and common sense; they wind up telegraph companies, and look upon railroads and locomotives with perfect contempt. These are now the institutions that form the commercial history of Marshall, but we hope the day is at hand, when railroads will be one of the "peculiar institutions" of this city and of the State; when ox teams shall give way to the iron horse, which travels with twenty times its speed, and a thousand times its burden.

Notwithstanding all these drawbacks and several years of severe drouth, and consequent short crops, Marshall has steadily improved, still continues to improve, and will go on progressing until it really becomes, what it now is in title, a city. There are now in course of erection probably more fine dwellings than were ever put up before in one season; and a great number of smaller buildings, also another church edifice, and a large and commodious brick hotel, which will be finished and furnished in modern style, with ample accommodations for the traveling public. The railroads between here and Shreveport are steadily progressing, with the fairest prospects of early completion. When these are in operation and an easy communication established between here and the Queen City of the South, Marshall will become the resort of many from all parts of the Union in pursuit of health, as now they go to the sea shore, or other celebrated watering places, or in Europe to the isles of Hyres, to Nice or to certain parts of sunny Italy.

\* \* \* \* \*

MARSHALL, July 22d, 1856.

✍ An ordinance authorizing the subscription by Louisville of \$200,000 to the Lexington and Big Sandy Railroad, has been lost in the Board of Aldermen of that city.—*Covington Journal*.

[From the Savannah (Ga.) News.]

#### THE PACIFIC RAILROAD.

We have steadily advocated the incalculable importance of this enterprise, looking upon it as a commercial and national necessity. The majority of the committee to whom the matter was referred in the House, have recommended the building of three roads, a project which we consider one of the most unwise ever offered for the sanction of a legislative body. We have been, and still are of the opinion that a railroad built upon the Southern or Texas route would be the best, and indeed the only one at present either expedient or practicable.

We have carefully read the majority and minority reports on this matter. One of the latter, that of Hon. Zedekiah Kidwell, of Virginia, takes the ground that a railroad to the Pacific by the shortest and best route would cost \$100,000 per mile, and with such an immense outlay, could never hope to pay even one-half its running expenses. This is a startling statement, and Mr. K. endeavors to fortify it by facts and figures. We have very carefully examined the mass of statistics relied on, and will give such of them as we can condense within the limits of a newspaper article. As to the cost of building the road, he says:

"The cost of the Boston and Worcester Railroad (44½ miles long) was, in 1855, including equipments, \$4,865,439 03; the cost of the Pennsylvania Railroad (248 miles long) was, in 1855, \$10,245,000, and the outfit \$2,900,000—total cost \$13,145,000; the cost of the Baltimore and Ohio Railroad (379 miles long) was, in 1855, including equipments, real estate, and \$996,777 26 expended on a second track, \$22,760,205 05; the cost of the New York and Erie Railroad (460 miles long) was, in 1855, including equipments, \$33,742,817 11; the cost of the New York Central Railroad (297 miles long) was, in 1855, including equipments, \$27,360,731 05; the cost of the Western Railroad, Massachusetts, (155 miles long) was, in 1855, including equipments, \$10,495,504 96.

The total length of these six railroads—more important, and located amidst a more dense population than any other six railroads in the United States—is 1,589 miles. Having command of labor, food, material and skill, on the best possible terms, upon the very line of the roads, and throughout their extent, their builders constructed them at far cheaper rates than can be hoped for upon the sand plains, or upon the snowy mountains, far distant from the habitations of men. And yet the cost of building and equipping those 1,589 miles, in the best part of the country, was \$112,369,697 20! which is over \$70,000 per mile, and but a very small part of it double track.

In the face of this experience in the cost of building railroads in the most populous portions of the United States, the engineers have submitted official statements, estimating the cost of building a railroad from Fulton, in Arkansas, through Texas, over waterless and sand plains, and across lofty mountains, 2,075 miles, to San Francisco, in California, at the sum of \$87,990,000! They officially state, for our official guidance, that, in their opinions, a road 480 miles longer than those six railroads, and at \$24,379,697 20 less cost than what we know those six roads cost, can be built across those uninhabited, barren and irregular mountains!

They also estimate that the shortest southern route (from Fort Smith to San Francisco),



which is 2,025 miles long, can be built for the sum of \$94,720,000. This road is 436 miles longer than the six roads referred to, and yet they estimate that it can be built for \$17,649,697 20 less money!

He then goes on to show that a double track road will cost at least double the above, that is \$140,000 per mile, as the cross-ties, rails, laborers, food and tools, will have to be conveyed more than a thousand miles. He also states that vast sterile plains, and rugged, extensive and uninhabitable mountains interpose between the termini of the road, and must be crossed.

We take Mr. K.'s six railroads, and on examination we find their total length, including branches, to be 1,906 miles, instead of 1,589. This will somewhat reduce his average cost per mile. When to this we add the fact that some of them have a double track, the length of which is not counted in the total length of road, we find a still greater difference.

We will now take some railroads of our own section, embracing every variety of route, from the swamps of the Congaree to the mountains of Tennessee and Georgia. In most of these cases we are able to give the actual cost of the road and equipment, from their reports; but where this is not attainable we give the amount of the capital stock and the debt, which is sufficiently accurate for our purpose.

| Name of Road.                   | Length. | Cost.        |
|---------------------------------|---------|--------------|
| Wilmington & Manchester.....    | 171     | \$2,330,887  |
| Charlotte & South Carolina..... | 169     | 1,719,045    |
| Greenville & Columbia.....      | 465     | 2,160,000    |
| South Carolina.....             | 203     | 7,133,848    |
| Georgia.....                    | 233     | 4,416,991    |
| Central.....                    | 191     | 3,833,140    |
| Macon & Western.....            | 102     | 1,647,045    |
| Southwestern.....               | 92      | 1,734,539    |
| Atlanta & La Grange.....        | 87      | 1,092,222    |
| Montgomery & West Point.....    | 116     | 1,929,416    |
| East Tennessee & Georgia.....   | 110     | 2,500,000    |
| Nashville & Chattanooga.....    | 151     | 3,843,694    |
|                                 | 1,730   | \$34,280,827 |

Here we have 12 railroads, of an aggregate length of 1,730 miles, costing \$34,280,827, which is less than \$20,000 per mile. Lest exceptions may be taken to our figures, on account of the great difference between them and those of Mr. K., we will give additional evidence. The Alabama & Florida Railroad, now in progress, is under contract to Messrs. Milner, Broughton & Co., for \$10,000 per mile for the first 30 miles, and \$12,000 for the balance. "The contractors engage to grade and prepare the road bed, to imbed the cross-ties therein, and lay down the iron rails and fastenings on the main track, on the turnout tracks, and on the tracks in depots—the railroad company furnishing the iron rails, chairs, spikes, &c." Add to this the cost of iron, buildings, stock, &c., and the total cost will not exceed \$20,000 per mile. The estimates of the Engineers of the Florida, Central, Pensacola & Georgia, Georgia & Florida, and Charleston & Savannah Railroads are even less than this. These estimates are based upon contracts already entered into, and now in progress, for grading, bridging, laying iron, building depots, &c.

Let us examine into this matter, and see wherein lies the great difference between the cost of railroads North and South. Take the first railroad mentioned by Mr. Kidwell, the Boston and Worcester. The main stem of this road is 44 miles in length, with a double track the entire distance. It has branches, the aggregate length of which is 24 miles. The number of passenger trains running daily over this road and branches is 30 each way. There are over 40 depots along the road,

many of them built at considerable expense. The right of way along the entire route, with few exceptions, was obliged to be purchased, and in many instances at an extravagant valuation. This corporation was more fortunate than other railroads running out of Boston, in obtaining a site for a depot, as it was paid a bonus of \$25,000 to locate its depot in a certain part of the city. Afterwards, when its increasing business rendered an extension of several acres necessary, it was obliged to pay a high price for the land. All these causes combine to make the cost of the road and equipment amount to a very large sum. The other roads mentioned, all have their depots in large cities, where property commands an almost fabulous price, and running, as they do, through a densely settled country, were obliged to pay a large amount for land damages.

Another cause of difference is in the greatly increased equipment needed by the Northern roads mentioned. These six roads run 66 passenger trains daily each way, besides a large number of freight trains; while the 12 Southern roads which we have specified run but 26 passenger trains. Now it is not to be presumed that a line of Pacific Railroad equal to Mr. K.'s six Northern roads, would require the same equipment. So some further deduction is necessary on this point.

Again, Mr. K. estimates a double track road at just double the cost of a single track. Here is an error too manifest to require anything more than a mention of it.

Mr. K. further says:

"No hesitation is felt in placing upon record the opinion that no railroad 2,000 miles long, from the valley of the Mississippi to San Francisco, upon any route whatever, can be built and stocked for \$100,000 per mile—\$200,000,000; for, however cheaply built, the road will require an immense stock to enable it to have sufficient capacity to earn interest upon the prodigious expenditures of money its building will necessarily involve."

In this he entirely ignores the fact that the Vicksburg, Shreveport & Texas Railroad, 190 miles in length, is progressing, and that this will form a part of the line of the Pacific Railroad. From the Eastern line of Texas this road takes the name of Texas Western Railroad, running to El Paso, a distance from Shreveport of about seven hundred and fifty miles. The Legislature of Texas has granted to this road six thousand dollars per mile, when graded for superstructure. It is also entitled to 10,000 acres of land per mile. This will be sufficient to build the road, and this brings us to El Paso, within some 700 miles of San Diego, on the Pacific coast.

This line is not along the sandy deserts, and over the impassable mountains which have loomed up before the mental vision of the Hon. gentleman. Look at the map of Texas, and along the entire line from Shreveport to El Paso, you will see villages. The last report of the Vicksburg, Shreveport and Texas road says:—"It has thirty per cent. more of arable land than any other route, and will cost fifty millions of dollars less to build it." And not only in directness, in cheapness of construction, and in lower grades, has it the advantage over other routes, but the climate is far more favorable than either of the others. Think of such a route as that proposed by Gov. Stevens, running from St Paul, Minnesota, through the Northern part of Nebraska, as high as the forty-ninth parallel of latitude, more than three degrees north of Montreal.—The idea is simply ridiculous.

The central route, as it is called, is but little better. This is to run from Fort Kearney, in forty-one, North latitude, through Utah, to San Francisco. It will be sufficient for this line to say that it lies north of the lines of railroads where trains were blocked up by snow for weeks together, during the past winter.

Speaking of the feasibility of building a Pacific railroad, at a remunerative cost, Mr. K. argues that the entire commerce of California, and the passage east and west, would not pay the running expenses. We have before shown that, in our opinion, he has estimated the cost of the road greatly above the mark; and, of course, its expenses would be proportionably reduced by a reduction of the cost of road and equipment. We have not space now to take up its items and investigate them; and, indeed, this might properly form a subject for another article, but we will here take occasion to say that he speaks of the trade as if it would be exclusively between the termini of the road, making no allowance for vast tracts of fertile land along the route which will immediately be brought into market, where towns and villages will spring up with magical rapidity. Take for example the Illinois Central Railroad. Lands along that line are now selling at from \$10 to \$40 per acre, which before the opening of the road were dull at 25 cents. It savors too much of old foggyism to base calculations upon the present population and trade of the country. The United States have not yet attained their full growth, the progress of empire is still westward, and the opening of this railroad will attract a vast population to the fertile plains of Texas and New Mexico. And even in those parts which are less favored by nature, the necessities of this immense tide of trade and travel will compel the foundation and growth of settlements, which will contribute their share towards increasing the revenue of the road.

#### FINANCES OF PHILADELPHIA.

It may be a matter of interest to our readers to have the following statement of the finances of this city for the year ending June 30. We take it from the *Daily Pennsylvanian*:

|   |                 |
|---|-----------------|
| Warrants countersigned in 1855.....                       | \$1,536,599 68  |
| Paid by City Treasurer.....                               | 1,079,240 24    |
| Outstanding of 1855.....                                  | \$157,350 44    |
| Countersigned in 1856.....                                | 2,123,565 94    |
| Paid in Certifi's of Loan \$61,360 00                     |                 |
| Paid in cash.....   | 1,844,472 88    |
|   | 1,008,772 88    |
| Outstanding warrants of 1856.....                         | \$216,793 06    |
| Total receipts into Treasury, 1856.....                   | \$3,408,946 22  |
| Paid out by City Treasurer.....                           | 2,923,742 12    |
| Balance in Treasury.....                                  | \$485,204 10    |
| Of which sum to pay interest on City Loans (applied)..... | 415,410 08      |
| Leaving for current expenses.....                         | \$69,794 02     |
| Funded debt.....  | \$16,781,470 87 |
| Loan to pay expenses of city..                            | 1,000,000 00    |
| Sunbury and Erie Railroad....                             | 300,000 00      |
| Gas Loan.....   | 216,400 00      |
| Northwestern R. R. Loan.....                              | 150,000 00      |
| Police and Telegraph.....                                 | 37,109 00       |
|   | \$18,514,970 87 |
| Redeemed.....   | 93,030 00       |
|   | \$18,421,940 87 |
| Trust Funds, January 1, 1856.                             |                 |
| Balance on hand.....                                      | \$49,406 76     |
| Receipts.....   | 105,269 34      |
|   | \$154,676 10    |
| Paid.....   | 112,453 76      |
| Balance.....  | \$42,222 34     |



## Railroads.

### NINTH ANNUAL REPORT OF THE PRESIDENT OF THE NEW ALBANY AND SALEM RAILROAD CO.

In the last Annual Report the Stockholders have been apprised of the difficulties which the Board had labored under in consequence of the want of means to furnish and fully equip the road for business.

The earnings have not been sufficient to enable the Directors to go on with the necessary improvements, and have sufficient left to meet existing engagements.

To obviate this difficulty, they, about the 1st of December last, ordered \$500,000 of income bonds to be issued, secured by a mortgage on the rolling stock of the company and such other property as had not before been pledged, and proposed to the holders of the second and third mortgage bonds to receive these bonds instead of cash, for two and a half years' interest; and the holders of the first mortgage bonds to receive them for one year's interest. This arrangement, it is hoped, will enable the Board to get through the difficulties under which they have been laboring.

Since the last Annual Report the work of finishing and ballasting the track, and relaying the flat bar iron has steadily progressed, and the track is now in good order on the entire length of the line, with the exception of six miles of flat bar yet to relay, which will probably be completed within the next three months.

The Crescent Iron Manufacturing Company, of Wheeling, with whom we had made a contract for the iron, unavoidably stopped for three or four months, during the winter and spring, which prevented their completing their contract. Their mills are now at work, and they assure us that the order shall be filled within the next four or six weeks.

With the completion of this contract we shall be able to complete the relaying of the last six miles of flat bar iron, which will be of great advantage to us, not only in relieving us from the expense of keeping up and running over any portion of that track, but it will relieve us from the bad name of having to run over it, which has had a very unfavorable influence upon our passenger business. The agents of competing roads have been able, by a system of misrepresentation, to alarm passengers, and keep them off the line.

While the track has been of great injury to us, in the way above stated, it has not been unsafe for passengers in the way it has been kept up and run over, and no better evidence of this is necessary than the fact that from the first opening of the road to the present time no passenger has been injured from any defect in the track, and for the last six months there have not been three failures of the trains to arrive in time, except during the snows of last winter.

Mr. John B. Anderson, the present efficient Superintendent of the road, has spent a large portion of his time on the line of the road, and has made important improvements in all parts of the service, as well as in the road itself.

By reference to the annexed statement of the assets and liabilities of the road, it will be seen that there has been expended, since the last report, three hundred and eighty-six thousand dollars, in finishing the construction of the road, putting up additional buildings, water stations, &c., and in furnishing additional cars and locomotives. We have also, in that time, rebuilt three of the locomotives, and put the machinery of the road generally in good order.

In addition to the freight and passenger cars put on the road within the year, we have now in the shops, in a forward state, some thirty-three freight cars and two passenger cars.

Below will be found a statement of the earnings of the road for the year ending June 30, 1856, with the expenses and net earnings. The first six months of this year have not yielded as much as was expected, which is in a great measure attributable to the fact that a most unprecedented falling off in the price of grain and other agricultural productions had taken place within the last six months.

The farmers having been getting very high prices for the last two years, were unwilling to submit to the fall, and held on to the grain. The probability now is that the next six months will show a large increase, as prices have advanced, and there is more disposition to sell.

There is now probably a much larger amount of grain in the State of Indiana than has ever been at one time before.

The receipts for the year ending June, 1856, have been \$730,407 13  
The receipts for the year ending June 30, 1855, were 645,827 57

|  |  |
|--|--|
| Increase—about 12 per cent.....              | \$84,579 56  |
| EARNINGS FOR THE YEAR ENDING JUNE 30, 1856.  |  |
| 1855. Freight, Passengers, Mail, Total.      |  |
| July.....                                    | \$20,985 51 \$27,268 23 \$1,837 50 \$50,091 24     |
| August.....                                  | 27,017 08 29,656 67 1,837 50 58,511 14             |
| September.....                               | 33,474 82 33,409 18 1,837 50 68,721 54             |
| October.....                                 | 33,549 08 45,915 68 1,837 50 81,202 26             |
| November.....                                | 32,144 18 32,578 49 1,837 50 66,560 27             |
| December.....                                | 40,402 07 25,591 42 1,837 50 67,830 99             |
|  | \$187,572 78 \$194,429 66 \$11,025 00 \$393,027 44 |
| 1856.  |  |
| January.....                                 | \$25,489 60 \$22,039 52 \$1,837 50 \$50,266 82     |
| February.....                                | 16,585 00 17,215 53 1,837 50 35,638 03             |
| March.....                                   | 27,295 53 30,322 21 1,837 50 59,455 24             |
| April.....                                   | 29,183 04 33,381 21 3,567 50 66,352 05             |
| May.....                                     | 25,118 50 33,649 25 3,567 50 62,335 25             |
| June.....                                    | 26,733 66 32,991 09 3,527 50 63,252 25             |
|  | \$150,405 53 \$170,699 16 \$16,275 00 \$337,379 69 |
|  | \$337,978 31 \$365,108 82 \$27,300 00 \$730,407 13 |
| Total receipts for the year.....             | \$730,407 13                                       |
| Expenses.....                                | 340,949 03   |
| Net.....                                     | \$389,458 10                                       |
| Less Interest on Bonds, &c.....              | 351,450 58   |
| Net, after paying interest and expenses..... | \$38,007 52  |

The earnings of the road for the year ending December 30th, 1856, had been estimated in January last at \$900,000, which would have been an increase of near \$15,000 per

month. The business of the first six months of this year shows an increase over the corresponding six months of last year of about \$12,000, or only \$2,000 per month.

This failure to come up to the estimate is accounted for above. I think the last six months may come up to the estimate for that time, but will not, perhaps, be sufficient to bring up the whole year to what we had expected.

The rolling stock of the road consists in 31 locomotives—

|                            |
|----------------------------|
| 8 of 24 tons.              |
| 15 of 20 "                 |
| 3 of 18 "                  |
| 5 of 16 "                  |
| 31                         |
| 524 cars—                  |
| 20 Passenger Cars,         |
| 6 Baggage Cars,            |
| 260 Box Freight Cars,      |
| 175 Platform Freight Cars, |
| 33 Dump Gravel Cars,       |
| 30 Hand Cars.              |

524

#### STATEMENT OF ASSETS AND LIABILITIES, JULY 1, 1856.

| ASSETS.  |                |
|--|----------------|
| Construction of road, including right of way, incidental expenses, engineering, discount, and interest on bonds, &c..... | \$6,029,630 33 |
| Depots, Water Stations, Machine Shops, Machinery, Engine Houses, &c.....   | 315,524 63     |
| Cars—Freight, Passenger and Baggage.....   | 237,453 83     |
| Locomotives.....   | 264,704 46     |
| Real Estate.....   | 82,183 76      |
| Total of permanent assets.....   | \$6,929,497 01 |
| Cash.....  | 6,275 38       |
| Due from Operating Department.....   | 67,123 29      |
| Fuel on hand.....  | 38,999 14      |
| Due from Post Office Department.....   | 5,512 51       |
| Land not necessary for use of road, for sale.....  | 18,302 47      |
| Material and unfinished work in shops.....   | 79,300 00      |
| Balance from agents and others.....  | 30,917 96      |
| Balance due from stock subscriptions.....  | 94,748 23      |
| Montgomery county Bonds.....   | 100,000 00     |
| Capital Stock of the Co. received in payment for Bonds.....  | 254,100 00     |
| 7 per cent. 3d Mortgage Bonds on hand unsold.....  | 452,800 00     |
|  | 1,147,501 03   |
|  | \$8,176,998 04 |

| LIABILITIES.   |                |
|--|----------------|
| Capital Stock.....   | \$2,511,824 31 |
| Ten per cent. Bonds, due \$100,000 per annum, from April, 1850, to April 1, 1863.....                          | \$500,000 00   |
| Seven per cent. Bonds, issued by Crawfordsville and Wash Railroad Co., Jan. 1, '63.....                        | 175,000 00     |
| Eight per cent. Bonds, \$175,000 due May 1, 1864, and \$200,000 per annum from May 1, 1866 to May 1, 1875..... | 2,325,000 00   |
| Seven per cent. 2d Mortgage Bonds, due June 1, 1873.....   | 1,000,000 00   |
| Seven per cent. 3d Mortgage Bonds, due Feb. 1, 1885.....   | 1,000,000 00   |
| Six per cent. Bonds issued to contractors.....   | 12,870 00      |
| Ten per cent. Income Bonds.....  | 17,500 00      |
| Deferred interest, payable in 10 per cent. Income Bonds.....   | 197,152 00     |
|  | 5,227,522 00   |
| Bills payable and balance due operatives.....  | 325,157 26     |
| Balance due on open accounts.....  | 8,341 59       |
| Balance to credit profit and loss.....   | 343,498 85     |
|  | 94,152 88      |
|  | \$8,476,908 04 |

#### INCREASE OF ASSETS FROM JULY 1, 1855 TO JULY 1, 1856.

|  |              |
|--|--------------|
| This amount added to Construction.....                 | \$317,184 20 |
| do Building Depots, Water Stations, Machinery, &c..... | 18,920 74    |
| do Cars.....   | 26,800 10    |
| do Locomotives.....                                    | 12,904 69    |
| do Real Estate.....                                    | 10,498 03    |
| Total addition to permanent assets.....                | \$386,307 76 |



|   |              |
|---|--------------|
| Less decrease of other assets as per statement.....                                       | 82,404 43    |
| Total increase of assets for the year.....  | \$303,903 23 |
| INCREASE OF LIABILITIES FROM JULY 1, 1855, TO JULY 1, 1856.                               |              |
| Ten per cent. Income Bonds.....   | \$17,500 00  |
| Deferred Interest, which is being paid by 10 per cent. Income Bonds.....                  | 197,132 00   |
| Increase of Bills Payable and balances due on open accounts.....                          | 77,820 23    |
| Balance of Net Earnings for the year to Profit and Loss.....                              | 32,027 52    |
|   | \$330,499 65 |
| Less decrease of Capital Stock, by forfeitures of Stock in settling with contractors..... | \$23,296 62  |
| Decrease of 6 per cent. Bonds received in payment for lands....                           | 3,500 00     |
|   | 26,596 62    |
|   | \$303,903 23 |

## DUST.

Among the many contrivances we have read of for confining the dust raised by the motion of trains, the following is among the most ingenious:

**ANOTHER INVENTION TO EXCLUDE DUST FROM RAILROAD CARS.**—The flying of dust when disturbed rises from under the car, and goes out at its side, and then passing through the window spaces and ventilators, fills the cars. To prevent the rising of the dust at the sides of the car, there are placed on the lower edge of the car, near the wheels, a series of slats placed in a horizontal frame, extending the length of the car. The frame, and slats resemble the ordinary Venetian window blinds. The slats turn on their axes, so that they may be adjusted to any degree of obliquity. When the cars are in motion, as is well known, there is a strong current of air produced train. The dust cannot pass out on the side; this current of air passes in through the slats, on each side of the car, and being stronger than the current under the car, drives the dust out under the cars, at the rear end of the whole of the car—the strong current of air coming in through the slats preventing it, and driving it entirely out of the way. —*Courier*.

We have never seen this tried and can therefore give no opinion but we tried an experiment for our own comfort in travelling which we know to be efficacious. Place a thin strip of board about six or eight inches wide down the front side of the open window and projecting out. This will create a current of air outwards from the car, and relieve in great measure the unpleasantness of the dust. We have never seen it tried on every window of a car but see no reason why it should not operate with every window as well as one.

## BUSINESS OF THE BALTIMORE AND OHIO RAILROAD.

The Board of Directors of the Baltimore and Ohio Railroad Company held their regular monthly meeting yesterday morning, at the office of the Company. The reading of the official statement of the operations of the road, during the month of July, was the first business transacted. The annexed table shows the transportation eastwardly into Baltimore during the month of July:

Bark 211 tons; coal 57,894 tons; fire-brick 149 tons; firewood—tons; flour 45,747½ bbls; grain 1,182 tons; granite 518 tons; iron 476 tons; iron ore and manganese 859 tons; lard and butter 254 tons; leather 109 tons; cotton—bales; wool 5,532 bales; flaxseed

—casks; soap-stone 208 tons; lard-oil 97 tons; lumber 457 tons; lime 59 tons. Live stock, viz—hogs 7,941 head; sheep 6,340 head; horses and mules 136 head; horned cattle 1154 head; meal and shorts 189 tons; pork and bacon 3,100 tons; tobacco 2,854 hhds; whiskey 5,627 bbls; miscellaneous 618 tons; hay 5 tons; hemp 49 tons; flour from Washington Branch 2,191 bbls.

The revenue for the month has been, as follows:

|                 | Main stem.   | Wash'n Branch. | Total for both roads |
|-----------------|--------------|----------------|----------------------|
| For Passengers, | \$63,265.46  | \$29,370.87    | \$92,636.33          |
| For Freight,    | 317,579.26   | 7,736.28       | 325,315.54           |
|                 | \$380,844.72 | \$37,107.15    | \$417,951.87         |

On a comparison with the earnings of the corresponding month of last year, we have the following results:

|                 | Main Stem.              | Freight.     |
|-----------------|-------------------------|--------------|
| July, 1856..... | Passengers. \$63,265.46 | \$317,579.26 |
| July, 1855..... | 51,991.70               | 219,516.17   |
| Increase.....   | \$1,645.91              | \$98,063.19  |
|                 | Washington Branch.      |              |
| July, 1856..... | Passengers. \$29,370.87 | \$7,736.28   |
| July, 1855..... | 24,725.86               | 6,333.29     |
| Increase.....   | \$1,645.01              | \$1,402.89   |

This result is so unexpected that it is almost astounding, and shows clearly that the present admirable management of this great channel of communication between the Atlantic seaboard and the great West is fast developing the almost fabulous resources of that fertile region. We append the monthly receipts during the past ten months of the fiscal year, commencing with October, from which it will be seen that there has been a gain of \$576,822 46 over the corresponding period of the previous year.

|               | 1855.          | 1854.          |
|---------------|----------------|----------------|
| October.....  | \$423,436.84   | \$359,610.52   |
| November..... | 390,119.40     | 347,677.96     |
| December..... | 441,815.61     | 293,014.16     |
|               | 1856.          | 1855.          |
| January.....  | \$191,809.81   | \$370,211.93   |
| February..... | 211,513.76     | 216,299.49     |
| March.....    | 405,820.79     | 370,455.02     |
| April.....    | 551,811.28     | 368,292.84     |
| May.....      | 479,318.25     | 285,358.14     |
| June.....     | 438,788.26     | 371,753.84     |
| July.....     | 417,971.97     | 301,909.21     |
|               | \$3,061,405.57 | \$3,384,523.11 |
| Increase..... | 676,882.46     |                |

Now, when it is taken into consideration that the month of July is generally one in which the smallest freight business of the road is done, and at the same time reflect that from the extreme severity of the recent drouth, the navigation of the Ohio river has been almost entirely suspended, it is no less a matter of surprise than a source of gratification that the returns should present so extraordinary an exhibit of an excess of \$117,062 72 over the same month of the previous year. From this steady rate of increase, no less than from the additional sources of trade which it is well known that the Parkersburg extension will open, we cannot but feel impressed with the belief that this noble improvement—this stupendous monument to Baltimore enterprise and perseverance—is now placed upon a permanent basis, and that the value of its stock as an investment must continue to rise in public estimation.

**MAHONING AND SUSQUEHANNA R. R.**—The books for subscriptions to the stock of the Mahoning and Susquehanna Railroad Company were opened at various points in Indiana and Jefferson counties on the 18th of August. The charter for this company was granted in 1854. The road is designed to ex-

tend from Indiana through Pauxsutawney and intersect the Sunbury and Erie Railroad at a point nearly north of the latter place. The whole length of the road will be only about 37 miles, and it will prove of very great advantage to that section of the State.

## A MAGNIFICENT DEPOT.

The New York Central Railroad Company are at present building a depot in Buffalo to replace the narrow cramped concern which was burned down a short time since. The Depot when completed will be one of the most magnificent in the country, and will do credit to the company constructing it. The following are the dimensions as given in the *Buffalo Commercial Advertiser*:

"The entire length of the building on Exchange and Green streets is about 600 feet, and the width 130. The boundaries of the depot commence with the western line of their property on Green street, extending east, on the line of Green street, to within about 150 feet of Michigan, opposite the broad alley at the westerly end of the old Railroad Hotel; thence north 130 feet, and then west to the west line. By this plan, the depot is situated back about 60 feet from Exchange street, while its easterly end is 150 feet from Michigan. A large space of land is thus secured outside the depot, which will very much facilitate travel, by doing away with the blocking up of Exchange and Michigan streets.

"The height of the walls is to be 30 feet, covered by a truss roof, similar to that on Erie street.—The walls are very securely laid, the foundation being 5 feet 6 inches at the base, and tapering to 2 feet 4 inches at the top.

"There will be ample space for eight tracks.—The original plan gave a width of only 90 feet, but it has been wisely altered to 130. The style of architecture is to be similar to that on Erie street. The plans for offices and writing rooms, however, are not yet complete."

There is one thing that this building will still lack and that is an *iron roof*. They say that a burnt child dreads the fire. But corporations have not as keen sensibilities as children, and therefore, are slow to learn the folly of putting wood where iron would be as cheap and much better.

**THE VALUE OF THE TELEGRAPH TO RAILROAD COMPANIES.**—A writer in the *Washington Intelligencer* argues that every railroad company ought to have a line of magnetic telegraph, as the greatest security against collisions. Their cost is but a trifle to the valuable lives that are lost yearly on railroads, at a cost to them of all their profits and of reputation, and interminable and vexatious law suits.

A number of our leading railroads, now, have telegraphs owned and managed by themselves—all should have them. Every railroad in England has its telegraph; it was first applied there to railroad business.

On New Year's day, 1850, a catastrophe was averted, on one of the London Railroads, by the aid of the telegraph. A collision had occurred to an empty train at Gravesend, and the driver having leaped from his engine, the



latter started at full speed to London. Notice was given by telegraph to London and other stations; and while the line was kept clear an engine and other arrangements were prepared as a buttress to receive the runaway. The superintendent of the railroad also started down the line on an engine, and, on passing the runaway, had it transferred at the next crossing to the up line, so as to be in the rear of the fugitive. He then started in chase, and on overtaking the other, ran into it at speed, and the driver of his engine took possession of the fugitive—and all danger was at an end. Twelve stations were passed in safety; it passed Woolwich at fifteen miles an hour; it was within a couple of miles of London before it was arrested. Had its approach been unknown, the mere money value of the damage it would have caused might have equalled the cost of the whole line of telegraph.

#### PENNSYLVANIA RAILROAD.

The following is a statement of the tonnage transported over this road during the past month, and from January 1st to August 1st:

|                           | 1856.  | 1855.  | 1853.  |
|---------------------------|--------|--------|--------|
| Through tonnage East..... | 4,374  | 4,714  | 1,697  |
| "    "    West.....       | 4,377  | 4,521  | 1,742  |
| Local " East.....         | 19,929 | 14,550 | 6,316  |
| "    "    West.....       | 5,947  | 5,490  | 2,156  |
| Total July, tons.....     | 34,627 | 29,275 | 11,011 |
| June, ".....              | 35,880 | 28,406 | 14,185 |
| May, ".....               | 43,786 | 25,233 | 15,158 |
| April, ".....             | 45,044 | 24,228 | 22,347 |
| March, ".....             | 27,407 | 24,586 | 29,463 |
| February, ".....          | 26,886 | 12,041 | 22,075 |
| January, ".....           | 25,921 | 22,348 | 21,357 |

From Jan. 1 to July 31.....239,551 166,477 135,614  
Increase over 1855.....73,074 tons.  
" 1854.....103,837 "

The coal trade of the Allegheny region, which is just beginning to be developed, promises to be a heavy item in the business of the road. One company alone—the Allegheny—it is said, has contracted to deliver 100,000 tons to parties in this city, before the year closes, and that amount, with the shipments of the Westmoreland and Broad Top, will make a large total. In July 8,063 tons were sent to this market, and more than that quantity was sent from the mines to various towns along the road. The receipts at the Philadelphia depot of flour, grain and live stock, were less than during any month of this year, (as will be seen from the following statement,) and the receipts of coal more:

|               | Flour.<br>bbls. | Grain.<br>bush. | Live Stock.<br>pounds. | Coal.<br>tons. |
|---------------|-----------------|-----------------|------------------------|----------------|
| January.....  | 22,903          | 161,823         | 3,811,895              | 428            |
| February..... | 14,748          | 165,113         | 2,837,888              | 1,251          |
| March.....    | 13,855          | 91,196          | 3,910,880              | 3,204          |
| April.....    | 35,511          | 60,370          | 3,252,590              | 2,083          |
| May.....      | 47,437          | 61,331          | 3,705,280              | 4,343          |
| June.....     | 23,106          | 62,240          | 2,586,976              | 6,503          |
| July.....     | 5,373           | 43,830          | 2,496,950              | 8,563          |
|               | 167,264         | 648,403         | 22,602,159             | 25,865         |

MICH. SOUTHERN RAILROAD.—A half yearly dividend was made on the first of August, upon the capital stock of this road, which now comprises 67,121 shares, held in the name of 10,042, individuals. Included in this, is the "construction stock" of the Goshen line. The shares at \$100 each represent therefore a capital of \$6,712,100, and upon this the dividend of 5 per cent. was paid in the New York office of the corporation, amounting to \$335,605, which sum represents the net earnings of this successful road from January 1st to July 1st.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON,.....ASSOCIATE EDITORS.  
F. WRIGHTSON,.....

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| "    "    per month.....          | 3 00   |
| "    "    per annum.....          | 20 00  |
| One column, single insertion..... | 4 00   |
| "    "    per month.....          | 10 00  |
| "    "    per annum.....          | 80 00  |
| One page, single insertion.....   | 10 00  |
| "    "    per month.....          | 25 00  |
| "    "    per annum.....          | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

#### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improvements, from the factories of HOE and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD: SUPPLEMENT.

CINCINNATI, TUESDAY, SEPTEMBER 9, 1856.

## RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR.

W. WRIGHTSON, ASSOCIATE EDITOR

CINCINNATI, -- -- TUESDAY, SEPT. 9, 1856.

### PACIFIC RAILROAD—ITS PRESENT ASPECT.

Congress has again adjourned without any action on the Pacific Railroad question.—Momentous as it is to the interests of our country, both east and west, both north and south—the farmer, the merchant, and the planter, the civilian, the soldier, and the politician—Congress has done nothing to assist the judgment in forming an opinion as to what it will hereafter do to accomplish this great want of the age. We are then left to see what will be the prospect for the construction of this road unaided by government grants. In solving this question there are three things to consider: first, which route is intrinsically the best; second, which can command the necessary capital; third, which will best serve the end of uniting the Pacific and Atlantic.

FIRST. Which route is intrinsically the best? This is a question that we have already discussed so often, that we need here give but a summary of the arguments previously advanced. The distances traversed by the three prominent routes are as follows:

|                                    |              |
|------------------------------------|--------------|
| 1st route, near 48th parallel..... | 1,864 miles. |
| 2d " " 41st " .....                | 2,032 "      |
| 3d " " 32d " .....                 | 1,618 "      |

The highest passes on the three routes stand as follows:

|                                    |             |
|------------------------------------|-------------|
| 1st route, near 48th parallel..... | 6,044 feet. |
| 2d " " 41st " .....                | 8,373 "     |
| 3d " " 32d " .....                 | 5,717 "     |

The lowest degree of temperature in winter is an important consideration, as determining the comparative cost of working the road on the different routes. The comparison stands as follows:

|                                    |                    |
|------------------------------------|--------------------|
| 1st route, near 48th parallel..... | 30 deg. below zero |
| 2d " " 41st " .....                | 20 " " "           |
| 3d " " 32d " .....                 | 10 " above "       |

The latitude of the Pacific terminus is another important question. It stands as follows:

|                                    |                 |
|------------------------------------|-----------------|
| 1st route, near 48th parallel..... | 47 deg.         |
| 2d " " 41st " .....                | 37 deg. 30 min. |
| 3d " " 32d " .....                 | 32 deg. 40 min. |

The last and great item is the cost. This, after all, has more to do with determining the question than any other. That stands thus:

|                                    |               |
|------------------------------------|---------------|
| 1st route, near 48th parallel..... | \$130,781,000 |
| 2d " " 41st " .....                | 116,095,000   |
| 3d " " 32d " .....                 | 62,970,000    |

Any one examining this brief summary, based on government explorations, will readily form his own conclusion as to the point of intrinsic merit of the three great routes.

SECOND. Which can command the neces-

sary capital? We come now to the consideration of the probability of obtaining the necessary means for the construction of this great highway. In this we shall be aided greatly by the comparisons given in the discussion of the previous question. The shortest and the best route will inevitably command the confidence of the capitalist. Its own merit will recommend it; and the fact that it can be built the quickest and run to the best advantage, will give it a guarantee that cannot be possessed by any other. But aside from this there are other considerations worthy of a hearing. While the northern roads are as yet unorganized, and left only to the vague probabilities of an uncertain future, rendered more than ordinarily uncertain by the jealousies and preferences of influential parties, the route near the 32d parallel is already in the hands of a company that has steered safely through the shoals that surround the inception of any company, and has its contractors in the field, its operators at work, its whole line surveyed, its river crossings and its mountain passes fixed, and, what is last and most important, the policy of legislation on the part of the State through which it passes, already determined. So far, then, as the confidence of capitalists is concerned, the road near the 32d parallel must command what others cannot—a present and positive confidence on the part of the capitalist. Its own means, too, will furnish for the first half of this road what none of the other roads now possess—a basis of credit sufficient to build its entire length. These means are briefly these: A grant of land from Texas of *sixteen sections* on the reserve for every mile built, and a loan of *six thousand dollars* per mile after the first twenty-five miles are constructed. Thus it will be seen that the road on the 32d parallel possesses already a basis of credit that cannot by any possibility be acquired by any other.

THIRD. Which will best serve the end of uniting the Atlantic and the Pacific? We have shown from the comparison of distance and climate that the route of the 32d parallel is the best route as regards time consumed and the ability to operate in winter. It will also best accommodate the trade that a Pacific Railroad must serve. Aside from the all-important considerations of accommodation to our own citizens, who *must* have a road available at every season of the year, there is a vast commerce now flowing from ocean to ocean, twice crossing the tropics, and touching the frozen south, that must seek this outlet, because shorter, better, and more expedi-

tious. That commerce comes mainly from China and Australia, and the islands lying between them, and seeks the great commercial cities, New York, London, and Liverpool. The line of this road, as laid down on the 32d parallel, is substantially the shortest line between the points of starting and of destination for this vast trade, and by diverting it to this road from its now circuitous course, our great cities change places with those of Europe. We become the distributing marts, and not the ultimate points of destination. This will open to our merchants a field unopened before—a golden harvest, richer than the placers of California.

Such we conceive to be the present position of the Pacific Railroad question; and, in view of this state of facts, it becomes the duty of the managers of the Texas Western Railroad to use an energy and a zeal commensurate with the destiny that is plainly before them, and they may be well assured that they will reap a rich reward.

### DARING COURAGE.

The Rochester Advertiser is responsible for the following account of one of the most daring instances of courage that we have ever read.

"A day or two since, as the express train on the Buffalo, Corning and New York Railroad was approaching Batavia, at its usual high rate of speed, the engineer, Mr. Perry Hughland, discovered a man walking on the track. Every effort was made to stop the train, but the engineer saw at a glance that before it could be brought to a stand still, the man must inevitably be crushed. At this perilous moment, Mr. Hughland climbed through the window of his engine to the breast beam and jumping on the track, seized the man by the body and both fell head-long into the ditch by the side of the track! So close was the engine at the time that *the pilot struck the man's legs*, and added to the force already given by the courageous engineer! The engine ran two or three times its length before being stopped, showing that the man must have inevitably been crushed but for the courage and daring of Mr. Hughland. On recovering from the effects of the exciting incident, it was ascertained that the man upon the track was deaf, and of course had heard no alarm."

MUNIFICENT.—Mrs. Dudley, a wealthy lady of Albany, N. York, in addition to her already liberal donations to the Albany Observatory, has recently endowed that institution with a fund of fifty thousand dollars. This places the Albany Observatory in an independent position. It is to be placed in charge of observers connected with the coast survey.



### HOW SHOULD A STOCKHOLDER PROTECT HIS INTEREST?

We are now approaching a season of the year, when stockholders' meetings to receive the reports of their officers are usually held. It may not, therefore, be amiss, to give our views of the duties stockholders owe to themselves on such occasions, and the high responsibility they owe to the public. Every man, in duty to himself and to his family, is bound to protect his own interest from loss or detriment by the actions of others, and especially those in whom he puts confidence. It is his duty to require reports, frequent and searching, and to accept no sham statements, but to reach the truth at the bottom. Railroad stock, is in its nature different from real estate or dry goods. A man cannot examine the certificate, and from the quality of paper and engraving, and the character of the hand-writing decide its value. Its worth, or rather the appreciation of its worth, is based upon public confidence, and it should be the care of those who own it, that that confidence should not be abused. The innocent purchaser, who relies on the statements of men whom he did not appoint, and over whom he has had no control, is often made the sufferer by the negligence, indolence or inability of those who hold the controlling and appointing power. That such should not be the case is evident. We say, then, that every stockholder owes it to himself as a duty, and to the public as a responsibility, to see that the affairs of the company in which he holds stock are well managed. The question then occurs, How can he do this?

**FIRST**—He should attend the annual meetings. This is the first point of neglect by stockholders. Annual meetings of companies are held for the specific purpose of confronting the officers of the company, with those whose interests they represent, and of bringing them to a personal and present responsibility for their actions. It is a grand mistake to suppose that the whole duty of the stockholders at the only period at which they assemble, is to re-elect a set of officers. This is the smallest part of what they should do, and yet it is unfortunately held to be the largest. The retrospect of a year is before them to commend or condemn, and yet too often they turn from the responsibility, give a hasty glance at the future, and adjourn, not to await a more favorable opportunity, not to meet again when they shall have examined and scrutinized the reports, but to meet no more for a year, when a new set of discrepancies and difficulties again stare them in the face, urging them to demand explanations, only to be again laid over and placed in the grave of by-gone and forgotten things. But this is not the worst. Many stockholders do not attend at all. Either imagining that their presence can do no good, or that the whole is mere farce, they do not even lend the influence of their presence to the only show that is made

of discharging their responsibility. This is the worst feature of the case. Many a man, if at a meeting, to hear for himself the discrepancies of a report, would be compelled, by his own business habits, to ask an explanation, and this would lead to reforms—urgent, imperative reforms—which would save to companies both credit and money. It is the first and most imperative duty of a stockholder to attend at least the annual meetings of the company.

**SECOND**—It is his duty next to hear the reports and understand them. It is not enough to be there with others and act as they do. Every stockholder should feel as much responsibility as if he were the owner of the whole road, and were the only one receiving the accounts of his clerks and representatives; and if there were anything he did not understand, he should note it down for explanation at the proper time. To do this thoroughly, the reports should be printed previous to the meeting, to put it in the hands of each person present. It is not enough to read them hastily, and trust to memory for their comparison of statements. They should be before him in print, and examined with care and attention.

**THIRD**—He should vote intelligently. This is perhaps the most difficult part of the business of the stockholder at an annual meeting. It will avail but little if he be present, hear the report, &c., read, if after all he gives his vote in a blind and unintelligent manner—if he votes for the continuance of a course of things which his own judgment must tell him is wrong and needs a change. He should vote intelligently, though it cost him the sacrifice of friendship and minor interests. The great point before him, is the interest of his company, and no secondary considerations should be allowed to interfere with a sense of duty to himself and the public.

**LASTLY**—The duty of a stockholder is to make himself intelligent. We do not mean by this, what the world means by the general term of intelligence, but we mean that specific knowledge of railroads and railroading that shall enable him to pass an intelligent judgment upon the management of the road, and the cost of its various operations. This he can only do by informing himself of the operations of other companies, and drawing his deductions from the general experience of the whole. To this end he should take a railroad paper, and read what is written in both books and papers, on railroads and railroading. He should watch the operations of other companies, and compare them, item by item, with those of his own. Much of this information can only be derived from railroad papers, of which every stockholder should be a constant reader.

If this were done, if stockholders as a whole, or any considerable body of them, were to take this view of a matter of the present

magnitude and importance of our railroad interest, that interest would be rendered the safest and best investment in the world. Railroads would always pay handsome dividends, and be invariably what they ought to be.

From the N. O. Picayune.

### THE TEHUANTEPEC ENTERPRISE.

The Tehuantepec Company of this city have issued the following interesting statement of the condition, prospects, and value of this great work.

It was much needed for the information of the public. The interest in this route is revived with great force, and the circumstances of the country give it additional attraction.

We have been almost on the verge of a war with Great Britain, of which the real cause is the struggle for a free transit across the Isthmus, a communication not subject to the control or caprice of any foreign power, between the Atlantic and the Pacific States of the Union. The affairs of Central America, which so much perplex our statesmen, and have so much involved us in controversies with foreign nations that war at several times has been thought to be imminent, concern us mainly because through these States lie the chief routes by which it has been supposed that the commerce of the world could be made to pass from ocean to ocean. The United States, as the dominant power on this continent, with an immense commerce on both hemispheres, seeking vent in this channel, and requiring as a political necessity a quick and safe communication between its own parts, would not consent that any European nation should have influence or military stations, by which it can block up the way or control the passage through in either direction.

There is no settlement yet of the Central American difficulties, brought on by our efforts to abolish the predominance of England in the Caribbean seas, and secure, by compact with her, the neutrality of the Isthmus routes. The best settlement which can be expected amounts only to a truce, a mutual agreement to abstain from monopoly or interference; but it is obvious that all such agreements, however permanent they may be in their terms, have in them the elements of instability, and are subject to changes and chances, which depend on the caprice of either Government, or the changing circumstances and humors of the States of the Isthmus, through which the guaranteed routes must pass. The distance from our own borders of the nearest of these routes adds to the burden of uncertainty which must always exist, in regard to the management of these transit routes, and the good faith with which the pledged neutrality is observed; and a costly establishment of naval observation must always be kept up. If these were the best, or the only routes, these burdens would be cheerfully borne with; for a transit free and sure, at all times, to the citizens of the United States, must be maintained at all hazards and costs—almost as a condition of the coherence together of the Atlantic and Pacific States of the Union.

The route via Tehuantepec disposes of a great many of these political embarrassments, and takes the substance out of the quarrels with England about the Central American routes. Securing the Tehuantepec line and opening a road there, we have lost the paramount interest which we had in defeating the British attempt at monopoly below, and the British have lost the inducement to insist up-



on keeping the points which are only useful to her for military and naval stations, to command the termini of the inter-oceanic canals or railroads. The dispute will thus have lost its importance, and there can be no difficulty in compromising details that have no real signification. If our people turn their eyes and their interests to the Tehuantepec improvement—the Central American—they will go to the straight and short way to prevent Great Britain from caring any more about her pretensions, or from entertaining any designs to our prejudice at Nicaragua or Panama, or any other projected transit route.

The political advantage is resultant upon the intrinsic superiority of the route over all others, for the general commerce of the world, and its peculiar and immense value to the United States. These views are very well and lucidly expressed in the circular which we copy below, and to which we invite the attention of our readers. Those who have any special interest in New Orleans, who desire its prosperity, and wish to see it grow rapidly and largely in trade, population and wealth, will find in these States ample inducements to put their own hands to the work, and assist, by their means, in bringing it to an early consummation. No enterprise presented to the public combines such great promise of public benefits, with such prospects of profit to the capitalists who shall take it in hand.

#### CIRCULAR.

NEW ORLEANS, July 24, 1856.

Sir:—The Tehuantepec Company, established in New Orleans, possesses the right of way over the Isthmus of Tehuantepec, granted by the Government of Mexico, on the 5th of February, 1853, as well as the exclusive navigation of the Coatzacoalcos river.

This grant is recognised and protected by the Government of the United States, in the eighth article of the Gadsden Treaty, ratified on the 30th of June, 1854.

The value of this recognition may be estimated by the following extract from a letter from Hon. A. Dudley Mann, late Assistant Secretary of State, to the writer, dated London, October 4, 1855: "If the road shall be made, the recognition of the route by the Government of the United States will be of incalculable value. Such a recognition could not be obtained for any consideration. Neither the Executive nor the Senate could be influenced to give its assent to it, and without it, the contract would be comparatively worthless; as is manifest in the instance of the Garay Grant. Mexico is restrained by obligations which it would be worth her peace to disregard, to repudiate the Sloo Contract, while she abrogated with impunity that of Garay. The Sloo Contract is, therefore, the only one that it is likely ever could be enforced in Mexico. The United States Government, most assuredly, will never commit itself to another. Indeed, its policy, with respect to American citizens engaged in enterprises or trade in foreign countries, is almost certain to be different from what it has been heretofore. Those who establish themselves abroad in business pursuits, must look to the tribunals of the country in which they are located for redress, since they employ their capital in developing the resources and contributing to the wealth of that country. In this view of the matter, the Sloo Contract is worth millions of dollars, because it is protected by the United States."

A mere glance at the map will convince the most skeptical that the Tehuantepec route must command all the commerce of the Pacific Ocean with the United States and Europe. By it New Orleans will be brought within three thousand miles and ten days travel of San Francisco; and passengers by means of the railroads, now in construction, will be conveyed thence to New York in thirteen days.

At the same time that New Orleans will, by this route, be gaining 2,100 miles over that by Panama, which is the present highway, New York herself will make a saving of distance by sea of 1,160 miles, and thus be forced to use our road. The gain in passage from Liverpool by the Isthmus of Tehuantepec, over that by the Panama road, to China, is 2,200 miles in distance, and ten days in time. With these advantages the route by Tehuantepec must command the whole China trade.

Our route is considered a link in the great chain of communication between Great Britain and Australia, and a project is now on foot to run a line of steamers to Norfolk, and thence by the railroads of the United States, and the Isthmus of Tehuantepec, to Australia. When this line goes into operation it will at once double all our revenues, as the trade of Australia, with its fifty millions of gold, bears the same relation to Great Britain as the trade of California does to the United States.

A few years since the French Government sent out a distinguished engineer, Monsieur Emile Chevalier, to examine all the communications between the two oceans. He made an elaborate report on Panama and Nicaragua, and wound up in these words: "But if hereafter the other ways of communication and conspicuously that which traverses the Isthmus of Tehuantepec, should pass from a state of project into one of execution, it is certain the Panama Railroad would be abandoned by all travelers going either from the Atlantic States or Europe to California, and reciprocally. This road could only preserve the South American trade, which is now so feeble that it would have to increase tenfold before the receipts of the railroad would arrive at a reasonable sum."—[See "Annals du Commerce Exterieur," February, 1852.]

This opinion was confirmed and reiterated by the Geographical Society of Paris, after a detailed examination of all the authorities.—[See "Bulletin de la Societe de Geographie," July, 1852.]

For the present it is intended to run light draught steamers on the Coatzacoalcos river, a distance by the river of seventy-five miles, to Suchil, the head of navigation, and thence to open a carriage road for a distance of about 100 miles to the Pacific ocean. As a considerable part of this carriage road is already constructed, and from 30 to 40 miles on the Pacific slope is prairie, requiring but little labor, the remainder being over a country "whose peculiar formation," to use the words of Mr. Avery, who made the survey, "is remarkably well adapted to the construction of good roads," it is believed it can be completed in a short time, and at a small expense.

Our route has the advantage of unquestioned salubrity, and of passing through one of the most beautiful and picturesque countries that exists on the surface of the globe.

All the conditions of the grant have been punctually and faithfully complied with. The company made a contract with Sykes & Co.,

of Sheffield, England, who are contractors of some importance in Canada, for the construction of both the carriage and rail roads. The work was commenced by them, and some five or six miles opened. James Sykes unfortunately embarked on board the Arctic, with his principal men, intending to push the work through vigorously, when they became victims of the catastrophe that befell that vessel.

It is difficult to estimate the probable revenue of this road without producing a sum that borders on the fabulous. Major Barnard, in his report, page 121, says: "Taking 1849, '50 and '51 as the criterion, the lowest annual estimate of emigration between the Atlantic States and California is 141,820. Now calculating the passengers at 50,000 only per annum, at \$25 per head, the price now paid over Panama; the freight at but thirty tons per day, and the mail pay and gold at the same proportionate rate as is now received by the Panama road; its revenues would exceed two millions of dollars per annum after deducting \$900,000 for expenses. This sum will build the railroad in three years. If the steam transportation be undertaken by the company, at the rates now paid to other lines, this revenue will be much more than doubled. No one would have the temerity to estimate the profits of the railroad."

These are some of the advantages possessed by the route across the Isthmus of Tehuantepec over all its competitors.

It is peculiarly the Southern route, and it will concentrate in the ports of the Gulf of Mexico, the whole trade of the Pacific Ocean, the Indies and Australia, and make those ports the grand depots of all the commerce of the East. It is the conviction of this fact that has caused the whole moneyed interest of New York to combat, with a fury hitherto unknown, every effort to open this road. An attempt was made to prevent Sykes & Co. from performing their contract, by bribery; and the same means were tried on Smith, the present contractor. The recent attempt of Hargous and his party, which has been so signally defeated by the Government of the United States, originated from the same cause, and was instigated by the same men.

At length the people of New Orleans have awakened to the immense importance of this route, and money sufficient to open, immediately, the carriage road, has been subscribed. It is to be hoped that the same good feeling will continue, and that the capital necessary for the establishment of the steam transportation, and for all the other purposes of the company, will be supplied at the South; and that for once she will be true to her own interests, and secure all the pecuniary as well as the political and moral advantages, the accomplishment of this great enterprise will achieve.

There is nothing that will so completely render the South independent of the North, and bring her in intimate and close connection with our Pacific possessions, as the command of the Isthmus of Tehuantepec.

All that is required to accomplish every purpose of the company is two millions of dollars, and it can be shown to an arithmetical certainty that the revenue derived from that investment will be greater than can be obtained from any other known enterprise.

The company have sent down a light draught steamer to navigate the Coatzacoalcos river, and a vessel has also been despatched laden with supplies and men; there is sufficient native labor on the ground to vigor-



ously prosecute the work, and as the whole population of the country anticipate its accomplishment with enthusiasm, it will not only be done, but be done well and speedily.

Inviting your active co-operation, I am, respectfully, your obedient servant,

WALTER NICOL,

President Tehuantepec Company.

M. ABRAMS, Secretary.

#### RAILROADS

The following remarks are from an extracted speech of the Hon. O. H. Smith, before the Board of Trade of Indianapolis. They are well worth the perusal:

*"Third, She must look well to her railroads."*

I desire, on this subject, to institute no comparisons between our railroads already built, or between those in operation and those in process of construction. I have already said that much of the growth and present prosperity of our city are attributable to the railroads in operation, and I would be the last citizen of Indianapolis that would withhold from the men who projected and built them their just meed of gratitude. I would erect monuments to their memory, upon which, with their names, I would inscribe "the benefactors of the age."

Let me repeat, *look well to your railroads.* The railroad of to-day may not answer all the purposes of to-morrow; railroads of to-day may be counteracted by those of to-morrow; and a wise and vigilant city will, like the war-horse, snuff danger in the breeze. Our city, at one time, seemed to be secure from routes calculated to direct travel and business from her central position. She had secured the three great lines—the Bellefontaine, Central, and Lawrenceburg—all centering in her union depot, from the East; the Madison and Jeffersonville lines from the South, tapping the Ohio river at and above the Falls; the Peru and Lafayette lines from the Upper Wabash; and the Terre Haute line from the Central Wabash. By this latter route our city thought she was secure of the travel and business of St. Louis, and Springfield, Illinois; and so she would have been, to some extent, but for the rival route, by Springfield and Chicago, to the North, and the Wabash Valley Road, from Toledo, by Fort Wayne and Lafayette, to the Great Western and Alton Road. By these two lines, and especially by the latter, when completed, *"our city is soon to lose her position"* as between St. Louis, Springfield, and the Eastern cities; and even the Lafayette Road is to be *turned around*, and, instead of being *tributary* to our city and the railroads centering here running East, she is to become the *feeder of the Wabash Valley Road.* These conclusions are forced upon us by the map, and by facts from which we cannot escape if we would.

The question then arises, what does a prudent foresight dictate as our course? I answer, there is but one. *It is to build the direct line between Indianapolis and Springfield, known as the Indiana and Illinois Central.* This line, while it traverses one of the best countries in the United States, intersects one of the great railroad centers at Decatur, and another at Springfield, the capital of Illinois, the business and travel from St. Louis, Alton, and Hannibal on the Mississippi, and St. Joseph on the Missouri, and carries it forward on the direct and shortest line East to our city, throwing an immense amount of travel and business upon Indianapolis and the railroads running East, that would otherwise run off upon the

Chicago, or Wabash Valley Roads, and never see our city. I consider this road as an essential protection to our city against the rivalry I have named; and I shall be happy to find that our citizens will see the matter in its true light, and respond freely and fully to the request of Judge Roache, the President, and the Directors, to take stock in the work, payable when the cars shall run over it—the condition, I understand, they propose to attach to their subscription. There certainly can be no danger in making such subscription. If the road shall not be built, then the subscription cannot be called for; if it shall be built, then our citizens who may subscribe will have the double reward: first, the road, to add to the business of the city and the value of their property; and second, the stock in the road, of the value of which I propose saying a word before I close. *I have no interest whatever in this road; but I feel desirous of seeing it built for the benefit and protection of our city.* It may be thought by some that Indianapolis can stand and flourish independent of railroads. This is a great mistake, if entertained.

Look at the cities that are doing little business and appear to be standing still as to progress, on the one hand; and then turn to those that are, as it were, springing up in a day, and astonishing the world,—and the cause will at once be found in the difference in their railroad connections, and consequent commercial, manufacturing, and trading facilities to make a city. At this day there must be something more than a good site for a town. There must be active, energetic men, and they can only be found where their energy has scope for full action upon the great commercial, manufacturing, and trading avenues, such as are only to be found in the United States at this day, upon the Atlantic, Pacific, or the navigable waters of the interior, or such as combine a concentration of railroads, giving similar facilities to trade, commerce, and manufactures. And the growth and prosperity of a city will be very much in the ratio of these facilities.

I have spoken of the position of our capital, in the center of the State, surrounded by one of the best countries in the world. This must be conceded; but the question arises, does she, with her present railroad facilities, enjoy the full benefit of her position? Let us look into this matter. Indianapolis is located in the Central White River Valley, one of the greatest producing, as well as mineral regions of the State, extending North of the city some ninety miles, including the counties of Marion, Hamilton, Madison, Delaware, and Randolph, and terminating at the Ohio line. This section of the valley has been for years penetrated by the Peru and Bellefontaine Railroads, and its business connected directly with Indianapolis. But this great valley does not stop at our capital southwest, but extends 150 miles, including the counties of Marion, Johnson, Morgan, Munroe, Owen, Green, Daviess, Pike, Gibson, Warrick, and Vanderburg, and terminating at the city of Evansville, on the Ohio river, 200 miles below the Falls of the Ohio; and yet, strange as it may seem, it is true that our city is to this day as completely shut out from the travel and business of this great valley South as if she was a walled city, with no gate for entrance to the products and business of its Southern citizens—a valley abounding in fine rock, iron ore, pure bituminous coal, and inexhaustible quantities of building lumber, besides its immense agricultural products. This seems to have been the neglected part of our State by our

citizens, and the prosperity of the capital demands that it should be looked to. From my knowledge of the population and business of these counties that would be cast upon our city was the Straight Line Railroad now in process of construction between Evansville and Indianapolis completed, I have no hesitation in saying it would add one-third to the capital. But this is not all—it would afford to our manufacturers, at the cheapest rates, the coal of the right quality, at all seasons of the year. There is another matter connected with this railroad too important to our city to be overlooked. By connecting with the Ohio river 200 miles below the Falls, at Evansville, at the terminus of the Henderson and Nashville Road, and running upon a direct line to Indianapolis, only 155 miles, it must not only throw upon our city the travel from the South going North, but it will be so directly connected with the Southern lines of travel at Evansville, by boat and railroad, as to concentrate upon it, at our city, a large amount of business and travel going South, that would take other routes and pass around us. In these points of view I maintain that the construction of this road is essential to the protection and growth of Indianapolis, as well as Evansville. It is due to the occasion that I should name the effect that this road will have upon our city, in bringing our Southern groceries here, at about the same price to the dealer that they can be now brought from the Ohio river, at Cincinnati, saving the cost of river transportation from Evansville, of over 300 miles, and from the obstructions of bars and the Louisville Canal, so as to enable the Indianapolis wholesale grocery dealers to successfully compete with those of the cities above the Falls of the Ohio.

I have thus partially explained what I mean when I say to our citizens that we must "look well to our railroads." I have attempted to show that it is essential to the future growth and prosperity of Indianapolis, that the two additional lines of railroads should be built; the one connecting directly the capitals of Indiana and Illinois, and the roads running West from the latter and East from the former city; and the other connecting Indianapolis by direct line through the White River Valley South, with the Ohio river and the Southern railroads, at Evansville. With these two roads, in addition to those now in operation, Indianapolis will be safe for time, and her growth and prosperity in the future secured against all contingencies, while the effect of these two roads will be to increase the business and add to the earnings of the Bellefontaine, Peru, Central, and Cincinnati Railroads at least twenty per cent., and must add that much to the value of their stocks. I have, I trust, showed that it is greatly to the interest of our citizens of Indianapolis, that these two additional railroads should be built at an early day, so far as they will protect the city against rival works in other directions, and insure the growth and future prosperity of our capital; and the question arises, will our citizens see this matter in the true light, and come forward, when requested, and aid those who are struggling to build them for our benefit? It is proper that I should here make a single remark in relation to railroad stock, and to the question whether the stocks of these roads, when built, will maintain a fair value. It is not to be concealed that railroad stocks have been at low rates, except some that have maintained through the hard times a par value, and have made fair dividends. Among these, the Terre Haute and



Richmond Road, in our State; the Cleveland and Columbus Road, in Ohio; the Chicago and Galena Road, in Illinois, and numerous others. Still, when I look over the whole ground, and see the country in which we live; its great agricultural and mineral resources to load the cars with local freights; its rapidly increasing population, with the certainty that our great valley is yet to contain as dense a population as any part of the globe, to fill with passengers the flying trains; that the business of our railroads must increase in the ratio of the advance of the country in wealth, productions, and population—I say, when I contemplate these things, and then see that our railroads, even in infancy, not only pay running expenses and keep themselves in repair, but pay the interest on their cost of construction, with a largely increasing business from year to year, to my mind it gives evidence of a bright future, and I cannot doubt but that the two roads proposed for the aid of our citizens, with the other leading lines of the State, if well managed and cared for, will be paying roads, and maintain their stocks at high prices. I know that stockholders are in the habit of expecting too much from new roads, running through a new country, upon fresh grades, requiring early repairs, and consequently too frequently become disheartened, and sacrifice their stock when there is no market and no price for it. Such has been the case with the stockholders, at one time or other, of most of the par, high-paying roads at this day in the United States; when, if they had held on, their stocks would ultimately have been their best property.

There are two classes of subscribers to railroads; the one relying upon the value of the stock and the probable dividend alone, and the other on both, with the additional consideration of the effect the road will produce upon the city or country in which the subscribers live, in the enhancement of the value of their property, or the increase of their business. It is perhaps true that at this day it is essential that the three should combine, to enlist a sufficient subscription to build a railroad, as they evidently do in the two roads in question, and would in others centering in our city, were the question now as to the propriety of the citizens of Indianapolis subscribing to aid in their construction.

A word in closing to our business men, to our mechanics, to our merchants, to our railroad men, to our day laborers; in a word, to the citizens of Indianapolis of every description of business. I have this evening laid before you such facts and views as I believe, if put into energetic operation, will tend to the growth and prosperity of our city, and inure to the benefit of all classes, descriptions, and occupations; but think not you can enjoy these benefits without action, energetic action on your part. Remember that while the giant sleeps he is no more than the dwarf. What reward do we deserve if we will neither plant nor reap. He who expects the laws of nature reversed for his benefit, or trade and commerce to be so changed in their laws as to confer upon an unwilling city their choicest blessings, will be like the man who stood for days upon the bank of the Mississippi river, waiting for the water to run by, so that he could cross dry upon the bottom; that mighty stream, unheeding his position, rolled on and left him standing. So with trade and commerce; they pass by the cities that are not willing to receive and cherish them. Position alone is not enough, as I have already said; the emigrant and the business man pass by the

sleeping city, in search of trade and commerce, and locate and invest their money and apply their energies in some thriving business place, where men of energy and means will act with them in building up the place, and making it a business commercial mart, wherever they can find it; and such is the character of our people that distance lends enchantment to the prospect, if we may judge from the crowds that are daily rushing by, on their way to the still farther West, in search of homes.

I have sometimes been asked whether real estate in Indianapolis was not too high for the improvement of the city. My answer is, that the value of real estate in a city depends mainly upon the size, business, and future prospects of the place. I returned, a few days since, from Chicago, where I learned that the best business property in that city was worth \$1,400 per front foot, and lots three miles from the business part of the city were selling at from \$25 to \$50 per front foot; while the best business lots of our city may be bought for from \$200 to \$300 per front foot, and other property in proportion; and yet the immense business and rapid growth of Chicago seem to warrant the prices at which the real estate there is selling—much of the prospects of Chicago resulting from the enterprising character of her citizens, in concentrating the immense commerce of that region, by railroads, upon her, while the Lake is merely tributary to her business.

I am therefore of the opinion that real estate in Indianapolis will continue to rise in the ratio of the increased population and business of the city, and that city property, at present prices, is safe for investment and improvement, and in many parts of the city for speculation.

May I ask you, Mr. President, and the Board of Trade, over which you preside—may I ask every citizen of Indianapolis—to give to these matters your attention, and to act upon them as rational business men, wishing to do your part in promoting the prosperity of the city of our residence. Will I be pardoned for adverting for a moment to myself. As many of you know, I have for years, at home and abroad, been engaged in enterprises directly identified with the advancement of our city, and I may add, it is my present intention to spend the residue of my life, and the last of my energies, to promote her growth and prosperity; and when I shall be called away, I trust I shall leave the capital in full march towards that high destiny that awaits her.

[From the Democratic Press.]

#### REPORT OF THE CHIEF ENGINEER OF THE CHICAGO, IOWA AND NEBRASKA RAILROAD.

ENGINEER'S OFFICE CHICAGO, IOWA & NEBRASKA R. R.  
CLINTON, IOWA, Aug. 19th, 1866.

To the Executive Committee of the Chicago, Iowa and Nebraska Railroad:

The following statement will show the condition and prospects of your road. The first division of the road from Clinton to De Witt has been worked as fast as it could be done since my Report of June 7th. It is now in a forward state, and if the fall season should prove usually favorable it can be completed to De Witt by November 15th, in season for laying the track this year. Everything pertaining to the construction of this part of the road has been pushed forward as fast as men and money could do it. The grading is in a very favorable state, and ties enough for about one-half the distance have arrived, and are distributed, ready for laying

the iron. The iron, chairs, and spikes are all purchased, and are now in process of shipment—one locomotive, one passenger car, one baggage car, ten box freight cars, and ten platform cars have been purchased for operating the road to De Witt, all of which will be here in season to commence laying track by Sept. 1st, and if the season is favorable it is safe to calculate the opening of the road to De Witt on or before the 1st of January next.

Since my report of June 7th, the line has been surveyed from De Witt to Cedar Rapids, and is now ready for a final location, and, as indicated in the previous report, the line is very favorable as to directness, cheapness and grades. The line runs due west from De Witt, across Silver Creek, striking the valley of Clear Creek near its junction with Silver Creek, and follows the valley of Clear Creek in a northwesterly direction about three miles, to the summit level between Silver Creek and the Wabesipinicon River; it then runs directly west in a tangent of thirteen miles, crossing the Wabesipinicon River and striking the valley of Yankee Run near its junction with the Wabesipinicon; it then runs in a northwesterly direction, following the valley of Yankee Run for about twelve miles to the summit; it then runs nearly west for about ten miles, passing about one-half a mile south of Mechanicsville; it then bears a little north of Lisbon and Mount Vernon, striking the valley of Abbe Creek, and follows the valley for about seven miles, to the valley of Cedar River; it then follows the valley of Cedar River about eight miles to Cedar Rapids—making the total distance from Clinton, on the Mississippi River, to Cedar Rapids, eighty-one and a half miles. The work on the first four miles west of De Witt is the heaviest portion, averaging about 20,000 cubic yards of earth to the mile; the next forty miles the work is very light, and the road almost an air line, the work on this portion averaging about 5,000 cubic yards to the mile. The balance of the line, after striking the valley of Abbe Creek, will be about like the first portion next to De Witt; the work at the mouth of Big Creek and Indian Creek, two streams falling into Cedar River, on the east side, will be somewhat above the general average, but not exceeding 30,000 cubic yards to the mile. The line is very direct until it falls into the valley of Cedar River, within about eight miles of Cedar Rapids, and in following the valley of the river it must pass between the high bluffs on the east side and the river, which makes the line circuitous, and increases the distance about one and a half miles over an air line, and it may be found, upon further examinations, that the line can be materially improved by crossing Cedar River twice, thereby saving about one mile in distance, and dispensing with the most objectionable curve in the line. Some further examinations should be made of the line before determining upon a final location in the valley of the Cedar River. The maximum grade of the road has been fixed at 40 feet per mile, and the whole line, so far, can be kept within that limit without additional expense. There will necessarily be one curve in the valley of Cedar River, of about 2000 feet radius, two or three of 2,800, and the balance about 5,700. The line from Clinton to the valley of the Cedar, a distance of 72 miles, will have no curve of less radius than 5,700 feet, with tangents of 4 to 13 miles each, which will make that portion about equal to a straight line. The work on the whole line, of 81½ miles, will average about



8,000 cubic yards of paying work to the mile; and that (with the exception of about 50,000 yards of rock cutting) the cheapest kind of work. A large portion can be done with scrapers.

The following is the estimated cost of the line from Clinton to Clear Rapids, based upon the prices paid for iron, chairs, spikes, ties, &c., for the first 20 miles from Clinton to De Witt:

|   |             |
|---|-------------|
| For right of way and station grounds.....     | \$10,000    |
| For grading, masonry and bridges.....         | 205,000     |
| Iron, chairs, spikes and ties.....            | 738,000     |
| Laying track and ballasting.....              | 83,000      |
| Buildings, turn-table, &c.....                | 82,000      |
| Fencing, crossings, &c.....                   | 65,000      |
| Estimate for rolling stock.....               | 246,000     |
| Engineering, interest, contingencies, &c..... | 47,000      |
| Total cost of 8½ miles.....                   | \$1,476,000 |
| Making an average of \$18 000 per mile.       |             |

The expenditures applicable to this portion of the line to Aug. 1st, 1856, are as follows:

|   |            |
|---|------------|
| For right of way and station grounds..... | \$2,721 50 |
| Grading, bridging, masonry, &c.....       | 18,141 47  |
| Superstructure, not including iron.....   | 13,030 00  |
| Buildings.....                            | 746 17     |
| Engineering, interest, expense, &c.....   | 4,315 82   |

Making total expenditure to Aug. 1st.....\$38,954 96

And it will require for the completion of this portion of the line about \$70,000, not including iron, chairs, spikes, or rolling stock.

The line from De Witt to Cedar Rapids is advertised for letting to contractors on the 18th day of October next, and if the work is prosecuted as vigorously as it should be, the whole line to Cedar Rapids can be completed, ready for business, by January 1st, 1858. The whole work is of such a character that it can be completed as rapidly as the stockholders may desire.

The line from Cedar Rapids up the valley of the river to the Minnesota line, is now being examined, and the report from the Engineer in charge is very favorable for a cheap and direct line, and the interest of the people along the line is manifested by offers of very liberal subscription to the stock of the road. The stock subscription on the line from De Witt to Cedar Rapids can be estimated at \$400,000. In obtaining right of way and station grounds ample provision is made for the future increased business of the road. Our station arrangements are sufficiently ample for all time, both at Clinton and on the line; and all obtained without cost to the company. The country through which the road runs is not surpassed by any in the west, in point of agricultural resources. At De Witt alone it is estimated that there are now 300,000 bushels of grain awaiting shipment. The present business on the line of the road will make it a good paying road, and there is not more than one-quarter of the land under cultivation. When the country through which this road runs shall have been all improved and in a good state of cultivation, it will produce more for shipment than any country in the west now traversed by any railroad, as the production of the country is almost exclusively articles of railroad export. And it will be as good a line for local travel as any of its length in the west.

All of which is respectfully submitted.

M. SMITH, Chief Engineer.

ALBANY NORTHERN R. R.—We learn that the mortgage in this road has been foreclosed, and that the sale is to take place on the 10th of September. The holders of the first mortgage bonds have called a meeting to take measures to protect their interest at the sale.

#### THE PEOPLE AND THE RAILWAYS.

The Boston *Atlas* has an excellent article upon railways. We extract a paragraph.—There are cities a great way west of Boston that might profit by the advice given by the writer:

"Is it strange that this matter of a house should have become so considerable in Boston? Persons of moderate means go hunting up and down, bothering agents, and getting out of temper even with the very bills of the window. The fact is, that the ground upon which Boston proper stands, is not big enough for Boston. We are pressing daily and heavily upon our outskirts. This will undoubtedly, in time, concentrate a great city.—Charlestown, Roxbury, Dorchester and Cambridge will in time become constituent parts of the magnificent metropolis of New England.

But in doing our part in procuring this result, we must remember that population will be an essential element in its success. At the same time, you cannot have a population unless you can house it. Men and women of this day and generation are not in the habit of encamping in the fields. Here, all about us, is a splendid collection of people, all asking how they shall, in the best way, contribute their labor, their taxes, their custom, their weight to the city of Boston.

Against this appeal, which is one of the most important in an economical view, and which ought to go directly to the day-book and ledger of every man who trades in this city, we have the protestations of a few people in Washington and Boylston streets. It is very difficult to get at the real objections to street railways. We suspect that a hard, old-fashioned prejudice is at the bottom of all of it. Dismal gentlemen say that it will obstruct travel, as if the continual whirl of the omnibus through our streets did not obstruct travel. We wait upon the corners—we dodge the poles—we swear at the drivers—we are splashed by the wheels—we witness a hundred dead locks by a hundred vehicles—we see people kept out of this shop or that by the rush. We have also the minor satisfaction of seeing a horse drop down with fatigue. In addition to all, we can also witness, at any time when there is an unusual storm, fifty people waiting upon every corner, while from the stages as they drive by, we hear the refrain of Mr. Shillabar:

"All full inside! all full inside!"

The street railway has been devised exactly to meet this want, which a large portion of people experience in passing from one given point to another. How much in Washington, or in any other street, it will embarrass the local business, is not the question. The omnibus embarrasses business, but the opponents of street railways do not object to the omnibus. The problem is to secure the greatest good to the greatest number."

#### ILL. CENTRAL RAILROAD—PLAIN FACTS PLAINLY SPOKEN.

At the celebration of the completion of this great thoroughfare, Senator Douglas remarked that the grant of lands to the Central Railroad Company had, in the end, more than paid Illinois for what she had given. That her remaining wild lands were "worth more at the completion of the road, than the State originally asked for the whole." "We have," said the speaker, "the greatest railway in the

world; and yet it has cost the Government nothing; it has cost the State nothing; it has cost the contractors nothing; in short, it has cost nobody nothing! yet it will benefit everybody."

This statement of the Senator's embodies many interesting facts, which, if detailed, would cover hundreds of pages. The speaker might, in his train of facts, have cited one other, often overlooked by many who look upon, and talk about railroads, as monopolies, (and the greater the achievement the greater the monopoly, in their estimation,) namely—that this great railway which has cost us nothing, will enrich us hundreds of thousands of dollars annually, is *importing* wealth, as well as developing our own, which, but for this project, would be valueless and hidden for twenty years to come. What was Illinois before the construction of her railroads? Take Chicago, for example. We saw her when she had but 10 miles of railway—she then numbered 12,000 inhabitants. Now she has 100,000. Her growth, one year subsequent to the completion of the Central Road, has been almost double that of any previous year, and her improvements in proportion.

If, then, a single locality is so much enriched by our great central thoroughfare and its tributaries, what shall we say of the State, a greater part of which is but just beginning to be developed? Who can anticipate the extent of her growth and wealth for the next ten years, when she will have become the great centre of attraction for Foreign and Eastern immigration; when Chicago shall have become, in commercial importance, the second city in the Union, and other towns and cities throughout our Commonwealth have increased in *their* proportion?

Railroads encourage immigration? People coming West do not like to go away from the vicinity of the rail-track; wherever the iron horse wends his way, hardy emigrants will follow. Hitherto our richest agricultural lands were as wild as the savage, and as little sought. Now they are coming under the hand of the cultivator, by whose industry they are to become the garden spots of the Prairie State. To the Illinois Central Railroad are we mainly indebted for the bright prospect of the future. To this corporation are we indebted for the growing interest that pervades railroad enterprise throughout our Commonwealth; for while it has completed its own great work, it has given an impetus to other roads of importance in various sections, which will contribute their share toward the enrichment and future growth of Illinois.

#### GRAVITATING RAILROAD.

A writer in the Wilkesbarre *Record of the Times* of the 13th inst., over the initials "C. C.," in discussing the project of a Gravitating railroad from the Susquehanna river near Wilkesbarre to the Delaware river near the Water Gap, there to connect with the Morris and Essex railroad, the New Jersey Central railroad, or the Belvidere Delaware railroad, or all three of said roads, gives the following interesting description of the Pennsylvania Coal Company's Gravitating railroad, which extends from the State Canal on the Susquehanna, at Port Griffith, near Pittston, across the Moosic mountain, to the Delaware and Hudson Canal at Hawley, on the Lackawaxen, a distance of 47 miles:

"This (Pennsylvania coal) road consists of two tracks—one for loaded and one for empty cars—the terminus of one track being the



course and commencement of the other. The principle upon which the road is operated is (as the name imports) the very simple one of gravitation.

"Stationary steam engines drive the cars to the summit of a convenient hill by a second stationary engine, again to run forward in the same way. After attaining the head of the highest inclined plane, or 'summit' of the road, a 'level' much longer than the rest, is usually obtained.

"The loaded track of the Pennsylvania company's railroad, starting at the level of the Pennsylvania canal at Port Griffith, and ascending along the high ground on the eastern limit of the coal field, by six inclined planes, with their intermediate 'levels', reaches, at Dunmore, the base of the Moosic mountain. This it ascends by six more planes, in quick proximity to the summit, whence it runs off with an uninterrupted level of thirteen miles, to the Salem turnpike—here the grade has brought it so low that another plane is necessary. The grade thus acquired carries it down the Middle Creek to the Lackawaxen. The planes are of different grades, adapted to the slope of the hills and the direction of approach. They will probably average 1,000 yards in length, with an ascent of about one foot in ten. The grade of the levels is invariably 44 feet to the mile—this having been practically ascertained to be the grade at which a loaded train will move by its own weight without danger of acquiring such velocity as to escape from the control of the conductor. On the empty track the grade is 50 feet per mile, in order to recompense the loss of power effected by the discharge of the coal. The engines on this road were manufactured by the Mattewan company on the Hudson. Those on the loaded track have three cylinders each, of 30 horse power. Those on the empty track, two cylinders, of the same power.

"These engines are, in most cases, located at the summit of the inclined planes, and are rigged with an endless wire rope, with links inserted at equal distances. The method of operating is very simple and rapid. Each train of twelve or fifteen cars is provided with two 'break' cars—the runner sits upon this 'break,' and thus controls the motion of the train. On arriving at the foot of an inclined plane, he rings the bell as a signal to the engineer, who at once puts the engine in motion, and the rope begins to run—disconnects four of his cars, and attaches to the front car a 'sling,' a short chain with a hook at each end. When the link of the endless rope passes around the 'shive wheel,' at the foot of the plane, he slips the other hook into the link, and is instantly in motion. Riding up with the first four cars, he stops at the head of the plane while a 'footman' attaches the rest, which are drawn at four different 'operations' of the engine. The last four are drawn over the head with impetus enough to start the others by concussion, and away they will go over another level. The fair running time of each trip of five cars over the inclined plane is generally about three minutes. Twenty trips an hour, and fifteen working hours a day, gives 1,500 cars per day as the absolute working capacity of the road. The average weight of each car on this road is 3,600 lbs., and the average of its coal 3,100 lbs. If we call the load of each car one and a half tons, we shall have a daily capacity of 5,200 tons. Allowing 300 working days in the year, we obtain 1,560,000 tons. The authorship of this simple and beautiful plan

of road has been claimed for the late Josiah White, of Philadelphia; but I believe it is now on all hands conceded to James Archibald, Esq., so long the Chief Engineer of the Delaware and Hudson Canal company—now in charge of the Delaware, Lackawana and Western Railroad. Its advantages are:

1st. "The facility with which it can be adopted to a broken and mountainous, country of abrupt descents, where locomotive grades are unattainable.

"2d The great reduction of cost of 'motive power,' which is the principal item of expense in operating a locomotive road.

"Its only disadvantage is, that an accident to the machinery of any plane stops the whole road. This, however, is greatly mitigated by keeping duplicates of machinery constantly on hand; and on the Pennsylvania company's road, a detention of more than forty-eight hours is a very rare casualty. This road is now worked at something over one-third its actual capacity, and is running to market an average per diem of 2,200 tons. In the original grading of the road, the surface of the ground at grade was followed as far as possible to make the first expense a minimum—very much, I think, to the disadvantage of the road, when viewed as a permanent work; for the curvature is in many places under 200 feet radius—whereas, 1,000 feet is now considered a minimum for all first class railroads, less than this being dangerous and unpleasant. The superstructure, also, of the Pennsylvania company's railroad is the old wooden rail, with strap iron, making always, with the best of care, an undulating and uneven surface, and requiring a number of hands constantly employed for repairs."

From the American Railway Times.

#### ATLANTA AND LA GRANGE R. E.

|   |              |
|---|--------------|
| The earnings of this road for the year ending June 30, 1856, amounted to.....   | \$278,123 74 |
| The operating expenses were.....  | 104,343 00   |
| Leaving net profits for year's operations.....  | \$173,780 74 |
| Deduct balance of interest account.....   | 13,967 84    |
| Balance net profits, after paying expenses and interest.....  | \$150,822 90 |
| From this two dividends have been declared, of 4 per cent. each.....  | 28,044 80    |
| Applicable to Reserve Fund.....   | 101,778 10   |
| By reference to the Report of the Treasurer, it will be seen that the balance to profit and loss, on the 1st of July, inst., was..... | 335,103 53   |
| This amount was, however, chargeable on that day, with dividend, then payable.....  | \$29,022 00  |
| Balance of interest on that day payable.....  | 6,965 00     |
|   | 33,987 00    |
| Balance to credit of profit and loss account.....   | 299,116 53   |

The large reserved fund has been partly expended in additional outfit for the road, in forming a sinking fund, and the remainder is cash on hand. The stock of the company, from the first, paid 7 per cent. per annum, and for several years past it has paid 8 per cent. The large surplus fund has given the company some trouble as to the best means of disposing of it, and the shareholders are cautioned against raising the stock account beyond a prudent limit. They say: The stock should remain a reliable 8 per cent. *Stock, with ample Reserved Fund for renewal and contingencies.*

The advice is well worthy of being followed. If the reserve fund becomes too large, distribute it pro rata; but be very careful not to spread out the stock so that the dividends from real net earnings will not cover it annually and certainly. The gross receipts have increased during the past year \$27,047 and the net profits have increased \$21,763. The working or operating expenses were about

37½ per cent. of the gross receipts. The superintendent states that the cross-ties and other superstructure will need renewal to a considerable amount for some years to come. The road has only been in operation throughout but two years, and as the very favorable result is but a partial experiment, we should not think it advisable to distribute the overplus of earnings in an improvident way. The company own 13 engines, 6 passenger, 2 baggage, 75 box freight and 20 platform cars, with a good supply of gravel cars. One new locomotive and several cars are now being made to make up the efficient rolling stock force of the company. Several new buildings, for depots and engine houses, are reported as erected by the new Superintendent, Mr. George G. Hull, who has been lately appointed to the office. The general account of the Treasurer with the company is as follows:

|                                |                |
|--------------------------------|----------------|
| July 1, 1856.                  | Dr.            |
| To the Road and outfit.....    | \$1,145,939 44 |
| To Interest and Dividends..... | 268,175 25     |
| To Road Expenses.....          | 306,956 72     |
| To Bills Receivable.....       | 51,765 64      |
| To Suspense Account.....       | 483 25         |
| To Balance Cash on hand.....   | 61,607 78      |

\$1,834,923 08

|  |              |
|--|--------------|
| July 1, 1856.  | Cr.          |
| By Capital Stock paid in.....                                    | \$725,560 00 |
| By Company Bonds.....  | 199,000 00   |
| By Income from Road from March 1st, 1851, to July 1st, 1856..... | 909,703 80   |
| By Rents of Real Estate.....                                     | 531 70       |
| By due Individuals.....  | 132 58       |

\$1,834,923 08

The following is an exhibit of the condition of the Atlanta and La Grange Railroad Company on the 1st day of July, 1856:

#### ASSETS.

|                              |                |
|------------------------------|----------------|
| The Road and its outfit..... | \$1,145,939 44 |
| Bills Receivable.....        | 51,765 64      |
| Suspense Account.....        | 483 25         |
| Cash on hand.....            | 61,607 78      |

\$1,359,796 11

#### LIABILITIES.

|                      |              |
|----------------------|--------------|
| Capital Stock.....   | \$725,560 00 |
| Company's Bonds..... | 199,000 00   |
| Due Individuals..... | 132 58       |
| Profit and Loss..... | 335,103 53   |

\$1,359,796 11

**EXTENSION OF THE SOUTHWESTERN RAILROAD, GA.**—At a late meeting of the Directors of the South-Western Railroad, the following resolutions were adopted unanimously—

Resolved, That the President be, and he is hereby requested and instructed to cause a survey to be made, forthwith, for the extension of the Railroad of this company from Americus to Cuthbert, Randolph County, and a survey, also, from Sumter City to Cuthbert.

Resolved, That, if a satisfactory arrangement can be made for the transfer by the Georgia and Florida Railroad Company of their road from Americus to Sumter City to this Company, so as to make the same part and parcel of the South-western Railroad, then the extension will be made from Sumter City to Cuthbert—otherwise from Americus to Cuthbert.

Resolved, That so soon as the survey and location can be made, twenty miles of the extension be placed under contract, to be paid—one half in cash and one half in the stock of the South-western Railroad company—such stock to come in on the same terms with the now existing stock, so soon as the said twenty miles of extension shall be opened for transportation and travel.

Resolved, That this Company, by the preceding undertaking, contributing at least three hundred thousand dollars towards the further development of South-western Georgia, by



actually building, of itself, unaided by the people, their road to within a distance of twenty miles from Cuthbert and forty from Eufala, and with less than forty from Fort Gaines—feels that the people of all places and of the country tributary to them, respectively, should unite themselves to the South-western Railroad, and, through that road, connect and identify themselves with Macon and Savannah—with the seat of government, the mountain country of Georgia, and the General Railroad system of the Union.

Resolved, That the preceding resolutions be communicated by the President to the meeting which has been called to be held at Cuthbert on the approaching anniversary of American Independence.

True extracts from the minutes.

JOHN T. BOIFEUILLET, Sec'y.

—Savannah News.

[From the Philadelphia Inquirer.]

#### RUSSIA AND HER RESOURCES—A VIEW FROM AN ENGLISH SOURCE.

We have received the concluding paper from the pen of MacQueen, the English Statistician, on the resources of Russia.

The fisheries are described as of immense value. No less than five hundred thousand individuals are engaged in them. The annual estimate is given at £15,000,000 per annum.

The gold produced in the Oural mountains in 1851 amounted to £3,500,000.

In manufactures Russia is behind most of the other countries of Europe. Nevertheless the number of hands engaged in the linen trade is estimated at 4,000,000.

In 1852 the trade of Russia stood as under, with European States and the United States.

|              |             |
|--------------|-------------|
| Exports..... | £15,841,374 |
| Imports..... | 13,160,409  |

£6,789,985 of the former was to, and £3,901,209 of the latter was from Great Britain.

The recapitulation stands as follows:

#### SUMMARY.

Total population in round numbers.....72,000,000  
Of these there are, by the usual proportion, 9,000,000 males, from 15 to 45 years of age, liable to be called out to defend their country, while 800,000 increase come into life yearly to add to population or make good losses.

#### INCOME.

|                                 |              |
|---------------------------------|--------------|
| Agricultural grain produce..... | £589,205,289 |
| Ditto meadows and pasture.....  | 436,883,374  |
| Produce of forests.....         | 138,535,553  |
| Ditto houses' rental.....       | 20,523,000   |
| Ditto fisheries.....            | 15,000,000   |
| Ditto minerals.....             | 10,000,000   |
| Ditto poultry.....              | 3,000,000    |
| Ditto the chase.....            | 407,709      |
| Ditto internal trade.....       | 18,000,000   |

Total return for labor.....£1,234,551,930

#### FIXED PROPERTY.

|                                    |                |
|------------------------------------|----------------|
| Value improved lands.....          | £8,934,366,360 |
| Ditto forests.....                 | 2,081,003,770  |
| Ditto live stock.....              | 633,091,390    |
| Ditto Crown peasants.....          | 647,150,000    |
| Ditto private ditto.....           | 647,481,000    |
| Ditto houses in towns.....         | 220,000,000    |
| Ditto ditto country.....           | 190,000,000    |
| Ditto fisheries.....               | 300,000,000    |
| Ditto dead stock, farms.....       | 102,933,000    |
| Ditto poultry.....                 | 15,000,000     |
| Ditto wild animals.....            | 8,144,140      |
| Ditto minerals.....                | 200,000,000    |
| Ditto property in internal trade.. | 594,000,000    |

Total value fixed property.....£14,571,574,660

The above is without the estimated or real value of ships, public buildings, docks, wharves, manufactures, public or private, and without the value in property, in household furniture, jewelry, &c.; these being rather the produce taken out of the productions of the soil, can only be considered as manufactured articles, and therefore come under a different head. The total value of those adverted to must be a prodigious sum. Thus, take 500,000 of the houses with £500 sterling only in each, and we have £250,000,000. If we were to put down the whole at £1,400,000,000, we should not be beyond the mark.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, }  
T. WRIGHTSON, } .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 80 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO.,

# BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to McLeodon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

### BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, SEPTEMBER 23, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR.  
W. WRIGHTSON, Associate Editor.  
CINCINNATI, -- -- -- TUESDAY, SEPT. 23, 1856.

#### THE PROSPECTS OF THE TEXAS PACIFIC

We made, in our last, some estimates of the value of Stock in this road;—from which it is evident, that the *intrinsic* value of this Stock either is, or ought to be, equal to *par*. It must be admitted, however, that a great part of the property of the Company is contingent, on the road being made. We shall now proceed to show the probabilities of the work being completed at an early day.

*First*—our readers are aware that the Messrs. Brown—active, energetic and responsible men—have been several months at work, on the section of the road between Marshall and Shreveport. Several miles have been graded. The low waters on the Western Reserve, however, obstructed the conveyance of Iron, so that the Texas Legislature have extended the time required for the laying of the iron. This secures the charter from any danger of forfeiture from delay.—The work is now proceeding on the funds procured from subscriptions.

*Secondly.* The private subscriptions in the last few months have been very greatly increased, so that the work can go on, till it is ascertained whether Congress will do anything at its next session. If anything is done, this road will have an equal advantage in it. For no Pacific Road on the Middle, or any other route, can be aided by Congress, without giving aid to this. The Company will then be in a condition to consolidate all its means and push forward with vigor. If, on the other hand, Congress shall do nothing, it will, perhaps, be still better for this Company; for it will then be evident that no Pacific road can be made on any other route.—The only possible way in which a Pacific road can be made, will be, by uniting the vast means offered by Texas, with private capital, in the construction of a road to El Paso—780 miles. We have already shown conclusively, that if the Texas Western Railroads were made to El Paso, and there to stop, it would still be a very profitable work. All the commerce between the Atlantic and Pacific would still go there, for, it would be far shorter and cheaper than the Panama route.

*Thirdly.* The only question is, could capital be got to finish this work? The only mode

of answering this, is to consult *experience*.—We find, in fact, that capital has been found to carry on Wars, to make Railroads, to dig Mines, and hunt for Pearls and Diamonds, in immense quantities—most of it on not half the security which this company can offer.—We conclude, therefore, that capital *can* be got, in any quantity, on such securities. Thus it must be observed, that it is not at all necessary to procure the capital all in one quarter, or all at one time. On the contrary, the securities may be divided, and the money had of different parties and at different times.—For example, we may assume that the Company can finish *fifty miles* with its cash means.

Then, by the grants of Texas it will have,  
In State Bonds.....\$300,000  
In Lands.....512,000 Acres.

These may be pledged separately, and as they are worth \$2,500,000, nobody can doubt \$1,500,000 can be borrowed on them, which may be repeated for each 50 or 100 miles as the work progresses. Further, as the work progresses, and passes through the lands selected or near them, these lands will be trebled in value. The Company will then proceed to sell and pay its debts as it proceeds.

This process is not a speculative one; but has actually been practiced on by several companies, who have received grants of land.—The difference made in the value of lands, by the construction of Railroads, in entirely new countries, is something like the following ratio.

|  |                  |
|--|------------------|
| New Lands without any communication....            | \$1.00 per acre. |
| When a Railroad begins to penetrate them..         | 3.00 "           |
| When a Railroad passes through them to a city..... | 10.00 "          |

When, therefore, the Texas Pacific Railroad shall have passed *through* its lands or near them, so as to make them acceptable to market, they will be worth \$100,000 per mile!

With such a prize before them, it is not to be supposed that capitalists will be at all averse at embarking in an enterprise which offers such a rich prize.

In addition to this, we may add that the part of Texas, through which the road is commenced, is rapidly settling, and that as each 50 miles of road is completed, it will be made immediately available for use. Supposing the road made by private capital, and to be made at the rate of 100 miles per annum, it will all come into profitable use as it is made.

Such are the present prospects of the Texas Pacific Road, and we think it will be granted that this road *can* be made, and when made its Stock must be above par.

#### AN ACT

To amend the Caption and the first and sixteenth Sections of an Act to Incorporate the Texas Western Railroad Company. Approved February 16th, 1852.

SECTION 1. Be it enacted by the Legislature of this State of Texas, That the title or caption of an Act to incorporate the Vicksburg and El Paso Railroad Company, or Texas Western Railroad Company, approved February 16th, A. D., 1852, be so amended as hereafter to read as follows: An Act to incorporate the Southern Pacific Railroad Company; and the first section of the above recited Act shall hereafter read as follows: That Rufus Doane, James C. Hill, William T. Scott, Willis Stewart, Sam. Bogart, E. E. Lott, L. B. Camp, James W. Throckmorton, J. D. Todd, Joseph McDougal, Thomas A. Rogers, Adam Sullivan, Joshua Starr, C. D. Holbert, Mason Mosely, and Jacob Fisher, their associates and successors, be, and are hereby created and established a body corporate and politic, under the name and title of The Southern Pacific Railroad Company, with the capacity in said corporate name to make contracts, to have succession and a common seal, to make by-laws for its government and the regulation of its affairs, to sue and be sued, plead and be impleaded, to grant and receive, and generally to do and perform all such acts and things as may be necessary or proper for, or incident to the fulfillment of its obligations, or the maintenance of its right under this act, and consistent with the constitution of this State; and all the acts done by said Texas Western Railroad Company, or Vicksburg and El Paso Railroad Company, under the Act incorporating the same, or any Act amendatory thereto, shall be, and are hereby declared to be as legal and binding upon all the parties concerned therewith, and on said Company, under the name and title of the Southern Pacific Railroad Company as if made with said Company under said name.

Sec. 2. That the sixteenth section of the Act to which this is an amendment shall hereafter read as follows: Said Company shall be required to have a good and sufficient brake upon the hindmost car in all trains transporting passengers or merchandise, and also permanently stationed there a trusty and skillful brakeman, under a penalty not exceeding one hundred dollars for each offence, to be recovered in any court of competent jurisdiction, for the benefit of the State. And said Company shall cause to be placed on each locomotive engine passing on their road a bell of the weight of at least thirty-five pounds, or a steam whistle, and the said bell shall be rung, or the whistle blown, at the distance of at least eighty rods from the place of crossing any highway or turnpike, and kept ringing or blowing until the engine has passed or stopped.

Said Company shall be required to construct their railroad with good T or U iron rails:

Provided, That no land shall be donated unless the Company shall actually commence their road within four years, and actually finish



ish grading and furnishing cross-ties for at least ten miles within five years; and that this Act shall not be construed as an extension of the time of commencement of said road, as required in the original Act.

Provided, This road shall not, under any circumstances, have more than sixteen sections of land to the mile, under the provisions of what is known as the sixteen section law, and all branching privileges to be cut off, and none allowed; to be subject to all the provisions of the general railroad law of this State; and the files heretofore made in the General Land Office shall not secure any rights to said Company; and that this Act take effect from and after its passage. Passed August 16, 1856.

DEPARTMENT OF STATE,  
AUSTIN, Texas, Aug. 26, '56. }

I, the undersigned, Secretary of State of the State of Texas, hereby certify that the above and foregoing is a correct copy of the original enrolled Act, now on file in this Department. Witness my hand and the seal of the Department, the day and year above written.

EDWARD CLARK,  
Secretary of State.

#### PROCEEDINGS OF THE GENERAL RAILROAD CONVENTION.

The Convention assembled at the Burnet House, in Cincinnati, at 10 o'clock, Sept. 17. The various Railroads were represented as follows:

ILLINOIS CENTRAL R. R.—Geo. Watson, Sup't; Robert Forsyth, Freight Agent; John Conning, Passenger Agent.  
CLEVELAND & ERIE—A. Stone, Jr., Pres't; A. Hills, H. Nottingham.  
GRAND TRUNK, CA.—S. P. Bidder, Managing Director.  
MICHIGAN SOUTHERN & NORTHERN INDIANA—Samuel Brown, General Sup't; A. Wilkinson, Asst Sup't.  
MICHIGAN CENTRAL—N. Rice, General Sup't; George Williams, General Agent.  
BUFFALO & ERIE—Dean Richmond, C. C. Dennis, Sup't.  
CLEVELAND, COLUMBUS & CINCINNATI—A. Stone, Jr., A. Hills, E. S. Flint, Sup't; H. C. Marshall.  
NEW ALBANY & SALEM—John B. Anderson, Sup't; N. Stevens.  
BUFFALO & CORNING & GENESSEE VALLEY—Charles G. Miller, Sup't.  
LITTLE MIAMI & COLUMBUS & XENIA—Jacob Strader, Pres't; John Kilgour, Sec'y; W. H. Clement, Sup't.  
CHICAGO, ALTON, & ST. LOUIS—Ham. Spencer, Lessee; H. A. Gargett, C. E.  
BELLEFONTAINE LINE—John Brough, Pres't; J. F. Boyd, Ticket Agent.  
OHIO & MISSISSIPPI, WEST END—Isaac Wyman, General Ticket Agent.  
OHIO & MISSISSIPPI, EAST END—Andrew Talcott, Chief Engineer and Sup't.  
INDIANA CENTRAL—James M. Smith, Sup't.  
NORTHERN NEW YORK—Geo. Parker, Sup't.  
CENTRAL OHIO—J. W. Brown, General Ticket Agent; D. P. Gray, General Freight Agent.  
CLEVELAND & TOLEDO—T. Perkins, Sup't.  
BOSTON & WORCESTER—H. E. Sargent, Gen'l Freight Agent.  
BALTIMORE & OHIO—L. M. Cole, General Ticket Ag't; L. S. Gordon, General Freight Agent.  
NEW YORK & ERIE—Homer Ramsdell, Pres't; D. C. McCallum, Sup't; C. Smith, Director; B. W. Blanchard, General Freight Agent.  
HUDSON RIVER—Samuel Sloan, Pres't; M. L. Sykes, Jr., Vice Pres't.  
PENNSYLVANIA CENTRAL—H. J. Lombaert, Sup't; L. L. Haupt, Ticket Agent; H. H. Houston, Freight Agent.  
LAFAYETTE & INDIANAPOLIS—J. O. D. Lilly, Sup't.  
JEFFERSONVILLE—A. E. Cruthers, Sup't; E. M. Le-mont, Freight Agent.  
PERU & INDIANAPOLIS AND TOLEDO, WABASH, & WESTERN—P. E. Sickler.  
PITTSBURG, FT. WAYNE, & CHICAGO—John Fleming, Ticket Agent; W. F. Houston, Freight Agent.  
LAKE SHORE—Wm. R. Barr, General Agent.  
INDIANAPOLIS & CINCINNATI—H. C. Lord, Vice Pres't.  
KENTUCKY CENTRAL—C. A. Withers, Sup't.  
TERRE HAUTE & RICHMOND—Samuel Crawford, Pres't; Charles Wood, Sec'y.  
NEW YORK CENTRAL—C. Vibbard, General Sup't; Dean Richmond, Vice Pres't; S. Drullard, Gen'l Freight Agent.  
TERRE HAUTE & ALTON—Charles Cruft, Pres't.

On motion, the Convention was organized by the election of Homer Ramsdell, Esq., of the

N. Y. & Erie R. R. as President, and H. C. Lord of the Indianapolis & Cincinnati R. R., and A. Wilkinson of the Michigan Southern & Northern Indiana R. R. as secretaries.

The president on taking the chair stated, that the parties who had issued the call for this meeting had stated in their circular that rates of fare for both passengers and freight were too low, and that it was the object of this Convention to devise some means of fixing and maintaining them at a remunerative rate; and that it was for the wisdom of the Convention to say what that means should be.

The remarks of the president were followed by the reading of the names of the delegates as given above.

Mr. Sloan of the Hudson River R. R. suggested the adoption of a resolution expressing the views of the Convention in reference to passenger fares, and a further resolution in regard to freight.

Mr. Brough of the Bellefontaine R. R. suggested the propriety of appointing a business Committee.

On motion of Mr. Sloan it was, "Resolved, that it is expedient to raise the rate of passenger fare."

Mr. Sloan then moved that the subject of passenger fare be referred to a Committee of one from each road represented. On the suggestion of Mr. Brough this Committee was reduced to nine and the resolution was adopted. The following gentlemen were appointed the Committee on Passenger Fare.

Messrs. C. Vibbard, N. Y. Central R. R., D. C. McCallum, N. Y. & Erie R. R., Geo. Williams, Michigan Central R. R., H. J. Lombaert, Pennsylvania Central R. R., L. M. Cole, Baltimore & Ohio R. R., J. F. Boyd, Bellefontaine Line, Geo. Parker, Northern New York R. R., Isaac Wyman of the Ohio and Mississippi R. R., and H. C. Marshall of the Cleveland, Columbus & Cincinnati R. R.

On motion of Mr. A. Stone of Clev. Col. & Cin. R. R., the subject of freight rates was referred to a Committee of ten. And the following gentlemen appointed the Committee:—Messrs. L. S. Gordon of the Balt. & Ohio R. R., S. Drullard, N. Y. Central, H. H. Houston, Penn. Central R. R., Mr. Phillips of the Clev. & Toledo R. R., A. Hills, Clev. Col. & Cin. R. R., Geo. Williams, Michigan Central R. R., B. W. Blanchard, N. Y. & Erie R. R., H. E. Sargent, of the Boston and Worcester R. R., W. H. Clements, Little Miami R. R., and J. Brough of the Bellefontaine Line.

It was asked by Mr. Houston whether the Cincinnati and Lake Line was represented, and it was suggested that it was wholly fruitless to fix rates unless this Line concurred in the arrangement. After some discussion the whole subject was referred to the proper Committee.

Mr. Brough then moved that a Committee of seven be appointed to report upon the means of giving force and effect to the orders and proceedings of this Convention. The motion was adopted and the following gentlemen appointed:

Messrs. Dean Richmond of the N. Y. Central R. R., D. C. McCallum, N. Y. & Erie R. R., A. Stone, Clev. Col. & Cin. R. R., H. J. Lombaert, Penn. Central R. R., T. Perkins, Central O. Ham. Spencer Chic. Alton & St. Louis R. R., and W. H. Clement of the Little Miami R. R.

The president of the Convention, Mr. Ramsdell, then stated that he held a condensed statement of facts respecting an important suit which interested every Railroad Company, that of *Ross Winans, vs. the Erie R. R. Co.*, in the eight wheel Car-case. It was moved by Mr. Kilgour that the statement be read. The motion was adopted, and the secretary proceeded to read the statement.

After the reading of the statement and some remarks by Mr. Sloan explaining the position of the Hudson River R. R. Co., on this question the Convention on motion adjourned to five P. M.

#### AFTERNOON SESSION.

Convention met, according to adjournment, Sept. 18, 5 P. M.

Mr. Vibbard, Chairman of the Committee on the Passenger Tariff, reported the following resolutions:

#### Report of Committee on Rates of Fare.

The Committee to whom was referred the subject of passenger fares, present the following report:

*Resolved*, That the fares between New York, and common points in the West, shall in no case exceed 2½ cents per mile through; and of this sum the roads between Crestline and New York shall receive \$14.60.

Under this resolution the fare shall be as follows:

|                           |         |
|---------------------------|---------|
| New York to Columbus..... | \$16 25 |
| " " Cincinnati.....       | 18 50   |
| " " Chicago.....          | 22 00   |
| " " St. Louis.....        | 27 75   |
| " " Terre Haute.....      | 29 00   |
| " " Indianapolis.....     | 20 00   |

*Resolved*, That it is inexpedient to have different rates of fare for summer and winter between the Seaboard and the West; and that we recommend that the above rates be uniform the year round.

On motion, *Resolved*, That the report be accepted.

On motion, *Resolved*, That the resolutions of the committee be considered separately.

On motion of Mr. Vibbard, *Resolved*, That each railway company represented in this Convention shall be entitled to but one vote on any subject submitted to its consideration, and that each company furnish the Secretary with the name of the person authorized by them thus to act.

On motion of Mr. Stone, *Resolved*, That no railroad company not interested in the subject matter of any resolution shall be allowed a vote on the same.

Mr. McCallum offered the following amendment to the second resolution of the committee:

*Resolved*, That the New York and Erie Railroad may reduce the passenger fare East



*Resolved*, That in the death of John H. Done, late Superintendent of the Illinois Central Railroad Company, while in the discharge of his duty, the Railroad interest of the country lost an able and valuable man,



the community a good citizen, and his family a protector endeared to them by kindness and affection in all the social relations of life.

*Resolved*, That while lamenting the sudden death of our late colleague, we deeply sympathize with his afflicted family in this their bereavement.

On motion of Mr. Stone :

*Resolved*, That the Secretary be requested to superintend the printing of the minutes of the Convention, and furnish each of the Lines represented with copies thereof and the bill of expenses.

Letters were then read from the Secretary of Cincinnati Horticultural Society, inviting the members of the Convention to attend the Fair now being held in the city; also from M. M. Benton, Esq., President of the Covington and Lexington Railroad, inviting members to a ride to Lexington.

On motion the thanks of the Convention were returned for the courtesy.

On motion the thanks of the Convention were returned to Mr. A. B. Coleman, for the free use of Rooms at the Burnet House.

On motion, the Convention, adjourned to meet at Cleveland, the 1st of Oct., 1856.

HOMER RAMSDELL,

*President.*

H. C. LORD, }  
M. L. SYKES, } *Secretaries.*  
A. WILKINSON. }

#### EIGHT WHEEL CAR CASE.

The following is a condensed statement of the facts in this important case, as prepared by D. B. Eaton, Esq. It is given in the shape of a letter to Homer Ramsdell, Esq., and will be of interest to our readers:

45 WALL STREET, NEW YORK, }  
Sept. 12, 1856. }

Homer Ramsdell, Esq., Pres't N. Y. & E. R. R. Co.:

MY DEAR SIR:—Your letter of the 10th instant, in which you make the request that I will state the nature and effect of the matters involved and decided in the case of Ross Winans against the New York and Erie Railroad Company, lately tried at Canandaigua, before Judge Hall, has been received, and I will proceed to state what seems appropriate in answer thereto.

There is certainly no occasion for surprise in the fact that those interested in the railroads of the country attach much importance to the result of that suit. For eighteen years the railroad companies and car manufacturers of the United States have been annoyed by demands for money, threatened with injunctions, and burthened with heavy expenses, founded on the claims of Mr. Winans upon the patent which the jury in the verdict they rendered at Canandaigua, and the court in its opinion then delivered, have declared to be alike unfounded in law or fact. It has very seldom happened that so large interests have hung in suspense upon the issue of any litigation; or that questions have been involved that have had so wide an application through every part of the United States as those raised in this suit. It involved substantially the right of railroad transportation in this coun-

try, except subject to such tribute as Mr. Winans might deem it expedient to levy.—The car and engine builders, and the railroad companies throughout the Union, and every stockholder and bondholder in railroads, wherever he might live, had a common interest in the controversy. The claims made by the plaintiff were so exorbitant, especially until very lately, that they were justly regarded as threatening a serious blow to the already depressed credit of railroad securities; so that resistance was absolutely a measure of necessary self-defence. On the other hand, the hope of enforcing the claim was that of realizing a fortune of such princely magnitude as an inventor has hardly ever before attempted to grasp. It was at one time a question of millions, to be assured by a verdict of a jury—not indeed in a single suit, but as the result of enforcing the plaintiff's claim wherever railroads were in use and the courts of the United States had jurisdiction. A single verdict, sustained by the court, would enable that result to be easily reached. Stimulated by such hopes and fears, the litigation has been conducted with a corresponding perseverance, labor, and talent; from Maine to Maryland, through a period of eighteen years, in various courts of law and equity, against a great number of railroad companies and against other defendants, before juries of the country and juries of the city, before not less than six different judges of the courts of the United States, with all the talent and learning that abundant means and a liberal hand could supply, with a pertinacity of purpose rarely equalled, the plaintiff has pressed his claims. In the outset, and apparently guided by a different policy, it would seem as if the modesty of the demands made were thought to afford to the parties sued a hope of cheaper relief than the necessary expense and trouble of a defence, though successful. Influenced, as it would appear, mainly by such considerations, several companies, at an early day, purchased of the plaintiff, for a small sum (less than the cost of a single witness on the late trial), the right to use the alleged invention.

But when the railroads of the country had multiplied, and the investment already made in the prosecution of the claim, and the feeling excited by the controversy and the interests of those who had entered into the matter for speculative purposes, had become controlling considerations, so that retreat seemed to involve shame and dishonor, and success promised a reward which would justify vast efforts and hazards, the door of compromise was closed, and the controversy entered upon in earnest on both sides. Neither time, nor labor, nor money were spared. The history of railroads was thoroughly investigated from their origin, both in the United States and in England. Every old workshop was searched for plans and drawings of early railroad cars—every venerable engineer and machinist was questioned of his experience relative to railroad carriages. No geologist ever examined more carefully for antediluvian remains than the parties to this controversy searched through the ruins of old dilapidated railroad carriages for anything that would aid the claim or defence. On the trial at Canandaigua, the plaintiff not only brought huge old cars from Baltimore, but also transported several car loads of the ruins of antiquated railroad carriages from Quincy, Massachusetts, which had, for nearly a quarter of a century, been left to decay. The principles of science, so far as involved in the construction and pro-

pulsion of railroad carriages, were also put to the torture to extort something favorable to the claim or defence.

All the old treatises about railroad machinery were brought forth from their hiding places; great numbers of scientific experts were examined by the day, and hundreds of the witnesses were collected from various States, to explain the history of car building. Evidence was accumulated by the volume, arguments were made by the week, trials were measured by the month, counsel fees were paid by the "five thousands," and models were made by the car load, the history of railroads was lithographed, and counsel worked by the year. In a single suit, in a single year, before the same court, over seventy-five days were occupied in actual trial before a judge and jury, and at the end of the year each party found itself occupying the same position as at the beginning. It is safe to say that more than one hundred and fifty thousand dollars has been expended on this litigation, and until the verdict in favor of the New York and Erie Railroad Company at Canandaigua, no substantial progress has been made by either side, though the plaintiff had once obtained a verdict against the Troy and Schenectady Railroad, in the very courthouse in which our verdict was obtained; the court, however, declined to act upon that early verdict, having become convinced, as it is supposed, that justice was not done to the defence on that trial. It therefore has happened that, though the last of all the suits that have been commenced in 18 years of litigation, the one against the Erie Road first raised the legal questions in a form to be carried to the Supreme Court of the United States for a final determination.

One great difficulty with the defence has been that the plaintiff has constantly shifted both the ground and the place of attack—sometimes suing in Maryland, sometimes in New York, and sometimes in Massachusetts—so as to cause a new set of counsel to be brought into the defence, who would labor under great disadvantage, for want of familiarity with the complicated matters of fact and science involved. The case, even to those most familiar, is one of great difficulty, calling, as it does, for an investigation of matters so long since transpired, and for a history and detailed explanation of the operation of structures long since decayed and out of use, and of which many of the builders are dead or in parts unknown, or from want of memory are unable to afford the information desired.—Nearly all the matters of fact involved relate to the period of 1834 and prior thereto.

The patent on which the suits are brought was granted on the first day of October, 1834, and being of itself *prima facie* evidence of the originality of the alleged invention by the plaintiff, and the plaintiff having taken due precaution to preserve the proof of certain leading facts, he has had a great advantage over the defence in regard to the evidence of matters happening more than twenty years ago. It has, therefore, followed that it has been only after repeated trials and accumulated researches by different persons, that the full strength of the defence has been called forth, and the unfounded character of the plaintiff's pretensions exposed. Every new trial appears to have weakened the claim and strengthened the defence. Cars embodying the essential features of the plaintiff's alleged invention, though in practical use in Quincy, Massachusetts, several years before Mr. Win-



ans applied for a patent, have been brought to light for the first time during the past year, in preparing for the trial at Canandaigua; and scientific theories, claimed in his patent as essential and useful, and which, probably in the main through his influence, have been brought extensively and perniciously into operation and use on railroads, were, on that trial, for the first time, adequately demonstrated, on scientific principles, to be unfounded and pernicious. It is not too much to say that the investigations made in the preparation for the various trials had in suits brought on this patent, have demonstrated the inutility of those features in a railroad carriage which Mr. Winans most confidently commends, and have led to their rejection, and to the adoption of improved methods of construction, which, having been applied to practice, have, perhaps, in their remunerative results, in the aggregate, more than compensated the railroads of the country for the heavy burthen which Mr. Winans' suits have imposed on them. A single illustration of this assertion will not be inappropriate. Mr. Winans, in his patent, insists on the importance of the greatest nearness of the axles of the wheels in the trucks of an eight wheel car, and great remoteness of the trucks themselves; but practical experience, greatly aided by the scientific investigations made about the defence of his suits, has demonstrated the pernicious effects of that theory, and shown that the axles should be as far apart as the width of the track, and that the trucks should not be at the ends of the body, and such are the views and structure adopted by the best managed roads of the country, even including those of six feet gauge. The same remark might be made relative to his theory of exclusive center bearings and coned wheels. The history and philosophical principles of no branch of mechanical science has probably ever been more thoroughly investigated than those of railroad transportation in the preparation of these suits. The volumes of evidence taken in these cases, and the models and drawings therein referred to, will furnish the future historian of the history of transportation on land, a rich mine from which to draw his materials.

Every one who has any acquaintance with patent suits brought against railroad companies (and unfortunately few who have had any connection with railroads have been left ignorant of them), will be interested in a brief history of the leading suits commenced on this patent. It may aid somewhat in deciding the question now presented with such annoying frequency, whether a claim on a patent against a railroad company should be compromised or resisted. I have already said that the patent of Mr. Winans is dated on the 1st day of October, 1834. He was then a resident of the city of Baltimore, where he still resides.

About four years after this, I think in 1838, the alleged invention being disputed about Baltimore, Mr. Winans commenced a suit against the New Castle and Frenchtown Railroad Company, a road in the vicinity of Baltimore, which was tried before Chief Justice Taney, and in which the plaintiff failed to recover a verdict. It would seem that, little encouraged by that experiment near home, no further effort was made to enforce the claim for a period of nine years, when in 1847, many railroads having been built in the meantime, and speculators being understood to have become interested in the patent, the place of attack was changed to New York. A suit,

therefore, was commenced against the Troy and Schenectady Railroad Co. This case was brought to trial in 1850, at Canandaigua, and the counsel for the defence, though gentlemen of great ability, yet not being adequately acquainted with the history of railroads, and especially with the facts known in Baltimore, relative to the origin of the invention, suffered a defeat. Since this success, the place of trial appears never to have been removed back to the vicinity of Baltimore. As I have said, the judges regarded this last trial as unsatisfactory, and the plaintiff has been unable to make any use of his success, very prejudicial to the transportation interests of the country.

It became necessary, therefore, to institute other suits, and fight the battle over again from the beginning.

The next suit, so far as I am informed, was commenced against the New York and Maryland Line R. R. Co. I believe this suit was commenced in Philadelphia. The merits of the defence are said to have been but little investigated. Yet the plaintiff appears to have made no considerable progress toward establishing his patent. Since that date many suits have been commenced on the patent—some at law and some in equity—several of which are still pending. Among them are the following: *Rosa Winans agt. Eaton & Gilbert* (car builders), *Ross Winans agt. The Utica and Schenectady Railroad Company*, *Ross Winans agt. The Albany and Schenectady Railroad Company*, *Ross Winans agt. The Syracuse and Utica Railroad Company*, *Ross Winans agt. The Rochester and Syracuse Railroad Co.*, *Ross Winans agt. The Buffalo and Rochester Railroad Company*, *Ross Winans agt. The Eastern Railroad Company* (a New England road), *Ross Winans agt. The Harlem Railroad Company* (in which the two jury trials mentioned herein have been had), *Ross Winans agt. The Hudson River Railroad Company*,\* *Ross Winans agt. The New York and Erie Railroad Company*; and I am informed that since the commencement of the two latter suits, which were instituted in June, 1855, and before the trial at Canandaigua, Mr. Winans commenced a suit against some small R. R. Co. in the vicinity of Albany, New York. The settlement of the suit against the H. R. R. Co. had made it doubtful whether the experiment of a trial before an Albany jury was attainable without another suit being commenced against a road in that vicinity.

When the expense of each of these suits, the annoyance of conducting a litigation over so wide an extent of country, and the fact that it had been persevered in for nearly twenty years, are considered, no one can doubt the correctness of the general report, that Mr. Winans is a man of great wealth, and great strength of will. The litigation of Mr. Winans has not illustrated the attempt of a modest and needy inventor to obtain the reward due to his skill; but the energy of a man of fortune and calculating sagacity, in an effort to realize the fruits of a carefully designed system of thrift, to be carried out by the aid of numerous patents upon expanding branches of industry, with which his business had made him and those in his employ very early familiar. It has illustrated also the evil of granting patents founded on complicated

and ingenious specifications, that so slightly discriminate what is alleged to be new, and what is admitted to be old, that the practical mechanic finds himself unable to draw the dividing line. It has illustrated a frequent abuse of the policy of the patent law.

Indeed it is nearly impossible to state, in any reasonable limit, what Mr. Winans, in his specification, claims to have invented. Judge Nelson has repeatedly ruled that it embraced the exclusive right to make, vend, and use the eight wheel railroad car, of the structure now in common use "*as a whole car*;" and Judge Betts and Judge Hall ruled that the claim only covered a particular form of arranging the wheels in the truck and connecting them with the body; while eminent counsel for the respective parties have argued with a plausibility that has greatly embarrassed the court, that coned wheels and fixed wheels, and a certain length of body, and a certain distance apart of the trucks, were and were not (according to their respective theories), essential parts of the invention, or necessary elements of its practical application. These various views have not practically been treated as mere theory, but have really exerted a controlling influence on the case; and the discussions of sixteen years found them unsettled; so that the science of coned wheels and fixed wheels, and vibratory motion was largely investigated, before the learned judge who presided at Canandaigua was able to give the claim that practicable, and, as the defence consider, sound and just construction, that will probably put an end to further litigation before a jury.

The claim made by the patentee has always been broad enough to cover the exclusive right of using railroad cars of the form now used by all the railroads of the country; and has been a claim in which all railroad companies and car-builders have justly regarded themselves as having a common interest—the interest of self-preservation. Success on the part of Mr. Winans would prostrate them all at his feet. There can be but little doubt that the managers of nine-tenths of the early railroad companies purchased and put in use their cars in utter ignorance of the claims of Mr. Winans, and that they were as much surprised at hearing his claim of \$100 a year for the right to run an eight wheel railroad car, as they would have been had he claimed the same sum for the right to use a sorrel horse on a common road wagon. And even after all the noise this famous litigation has made, there are doubtless many railroad managers and car-builders, who will be surprised to learn that if the ruling in the case against the New York and Erie Railroad Co., made by Judge Hall at Canandaigua, is not sustained on appeal to the United States Supreme Court at Washington, they will be soon called upon to pay damages for each car they have run for years past, at the high rate we have indicated, or to enter upon the defence of an action which cannot be conducted through a single trial for less than \$20,000 to \$25,000. Yet such is the sober fact. Stale and unfounded as the claim may be regarded, it is by no means dead, and will be enforced with unyielding pertinacity, if we may judge the future by the past.

It might be that with a few roads, and with a view to enlist their influence for the patent, settlements would be made for a much less sum than I have indicated (and doubtless settlements would be so made with all as the litigation now stands), yet it cannot be doubted that, if the decision referred to is reversed,

\*NOTE.—This suit was commenced about the same time as the one against the New York and Erie Railroad Co., and Messrs. Eaton & Davis appeared as attorneys for the companies in each suit. But before the time of trial the H. R. R. Co. settled its suit with Mr. Winans, and of course withdrew from the defence.



the claims of the patentee would rise to the amount of damage he claims to have proved on the trials referred to.

There has also been great danger that feeble roads, whose means were not adequate to the defence of such expensive suits, would allow verdicts to go against them, upon the basis of which injunctions might be obtained against all the other roads, to the great peril of general inland transportation.

It was, as you know, in view of such considerations, strengthened by the feeling that each railroad owed all others a common duty, to resist so dangerous and unfounded a claim, that the N. Y. & E. R. R. Co., finding itself sued and forced to pay a large sum or resist, deliberately decided to defend the suit, let the defence cost what it might; nor was that company deterred from that defence by the withdrawal of the Hudson R. R. Co. from any participation of the expense; nor at a later period by an offer of settlement from the plaintiff, which was more reasonable than the claim made in the suit, or any previous offer. Though the N. Y. & E. R. R. Co., as you are well aware, might have been the gainer, directly and temporarily (and would have a very clear right to consult its own interest, by taking advantage of the great reduction of the claim of the plaintiff, which its own preparation for the defence had tended mainly to produce), yet the managers of the company felt that to abandon the defence, after having become fully acquainted with its strength, might be regarded as an admission that it was untenable, and would leave other railroad companies and car-builders more than before at the mercy of the plaintiff, and they therefore declined to do so.

That company felt that having discovered and rendered available, at great expense, new and valuable testimony, never before brought to light, and that if properly presented must end in a defeat of the stupendous claims by which the railroads of the country had been for so long harrassed, it was its duty to persevere in the defence, though at some sacrifice of its immediate interest. It did so, and the result has justified the expectation in which it persevered. Though the expenses were very heavy, they have been paid with a cheerfulness greatly heightened by the reflection that if its verdict is sustained at Washington every thousand dollars it has paid for the defence will save ten or twenty thousand dollars to the railroads of the country; and it is no more than just to say that for the perseverance and firmness which has reached this result, they have occasion mainly to be thankful to yourself.

It is not easy for one not familiar with the expense of complicated patent suits to appreciate the cost of defending a suit like the present. Without entering into any considerable detail, it will suffice to state that the trial occupied between four and five weeks, and that there were four counsel on each side engaged in the trial, several of whom had devoted nearly a year to the preparation of the cause for trial, and were some of them gentlemen whose services command the highest compensation known to the profession of which they are distinguished members.

That there were between eighty and one hundred witnesses, residing in many different States, examined on commission (or by deposition), and some of them at such length as to require from three to four hours to read a single deposition. The fees of the commissioners, for the defence alone, in taking those depositions, were not much short of \$1,000.

There were ten or eleven gentlemen of high scientific attainments, retained as witnesses through most or all of the trial, that had each to be paid \$25 or more per day for their services. The expense for models and lithographs, &c., to illustrate the history of railroad science, cost some thousand dollars.—The single item of board of witnesses for the defence, during the trial, was between \$600 and \$700. Short-hand writers were paid between \$1,400 and \$1,500 for reporting the evidence. From these facts some idea may be formed of the expense such a suit involves.

The opinion of Judge Hall, and the subsequent proceedings of the last day of trial, which embrace the exceptions, by the counsel for the plaintiff, which are appended hereto, will supersede the necessity of any further explanation of the technical matters of law and fact involved and passed upon at the trial. They are given literally from the reporter's notes.

A few words, however, seem to be required in explanation of the origin of the alleged invention, and the early carriages used on said roads, which were subject of discussion on the trial.

In 1830 Mr. Winans was in England, where eight-wheel railway carriages had been described in general treatises, by eminent engineers, then in circulation. He soon after returned to the United States, and entered into the employment of a Railroad Company, at Baltimore. Between his return and October, 1834, there were several eight-wheel railroad cars constructed and put into use, in and near that city. These cars, beyond all dispute, in most particulars, corresponded with Winans' patented car. The defence insist confidently that those cars, whoever invented them, were fully dedicated to the public. In order that the difficulty of the evidence in the case may be appreciated, it must be borne in mind, that the origin (as to invention) of each of these cars, its correspondence as a mechanical structure with the car patented, and with the cars of the New York and Erie Railroad Company, were all matters of dispute. Many witnesses were brought from Baltimore to the place of trial to testify on these points, and models and drawings were made of each of those cars, and the conflicting opinions of experts pronounced upon them.

About the same time an eight-wheel car was made in Philadelphia, and put into use, the origin, structure, and scientific principles of which were in like manner the subject of very accurate and laborious investigation.—It seems to have been the invention of Richard Imlay, who appears to have known nothing of Mr. Winans' experiments.

Prior to Winans' alleged invention there were several descriptions of eight-wheel cars constructed and used in the vicinity of Baltimore, known as the Timber, Wood and Trussel cars. They were in use in 1830. Each of these were claimed to embody all the essential features of Winans' alleged invention. Models and drawings were made of each of them, and many witnesses were examined in regard to their origin, operation, and structure.

Horatio Allen, an eminent engineer of New York, designed in 1830, and put in use in 1832, an engine which was claimed to apply and illustrate all the essential features of the alleged invention of Mr. Winans; and this engine was amply illustrated by models and diagrams, and its origin operation, and scientific principles of construction and operation were explained by Mr. Allen, and discussed

in great detail.

Another engine, made in 1833, by John B. Jervis, an engineer of high repute, was, on some of the trials, subjected to a like examination.

Some other cars, called the Washington cars, and made in 1834, were illustrated in drawings and models also, and their history unfolded. But the most important of all the eight-wheel cars invented and in use in the United States, before Mr. Winans put forth his exclusive claim, were what are called the Quincy Cars. These cars were the invention of Gridley Bryant of Boston, an engineer of great ingenuity and skill, to whom the country is probably more largely indebted for useful and valuable inventions, manfully and generously offered to public use, than to any man in the United States. He was really the first inventor in the United States of a practicable and valuable eight-wheel Railroad Car.—He made the invention in 1829. The court and jury are believed, in the case against the Erie Company, to have regarded the Quincy car of Bryant as embodying in 1829 every essential feature found in the car, patented by Mr. Winans in 1834. Mr. Bryant deserves the gratitude of the railroad interests of the country, as a man of science and genius, who has contributed largely to the useful inventions of the age. The form, operation, and history of these Quincy cars were illustrated by models and drawings in the late trial, with great care, and were explained on the stand by men *who more than a quarter of a century before* had worked with them about the transportation of the foundation stones of Bunker Hill Monument. It is a singular fact that particular structure (among the variety) of the Quincy cars, that more clearly than any other, embodied all the essential features claimed by Mr. Winans, had remained undiscovered and unillustrated through all the 18 years of litigation on this patent, until the *present case and during the present year*. This fact will illustrate the difficulty of defending a suit, in which the origin of a structure alleged to have been invented twenty-two years ago, is involved, and in which the case of the plaintiff is made out by the bare production in court of a copy of a paper certified at the patent office. And perhaps it equally well illustrates the necessity of some law forbidding any suit on a patent, the validity of which, if questioned, has not been established before the proper tribunal, within some period much shorter than twenty years after it was granted. If a patent cannot be established in less time than that, it may safely be regarded as of too doubtful originality to be entitled to the stringent protection of the patent laws.

It cannot be wise policy to give the protection of the patent laws to an invention, the nature, extent, and originality of which are so dubious and questionable that no two judges in twenty years can agree upon its interpretation, and no jury from Maine to Maryland can agree on its originality. What is claimed to be new and given the advantage of legal monopoly, ought to be reasonably clear and certain.

The facts to which I have referred show that eight-wheel cars had sprung into existence in various parts of the union when they were needed, and at about the same time.—Besides these American cars, anterior to Winans' patent, there were various prior English inventions of eight-wheel railway carriages that were relied upon by the defendants.

The oldest printed description of an eight-



wheel English railway carriage was found in the 24th volume of *The Repertory of Arts*, published in London, in 1814, twenty years before the date of the plaintiff's invention.

The next was a description of an engine in Wood's Treatise, published in London in 1825. The third was what is known as the Tredgold car, a description and drawing of which was published in a volume entitled "A practical treatise on Railways and Carriages, &c., &c.," by Thomas Tredgold, Civil Engineer, &c., &c.," printed in London in 1825. These public treatises, were doubtless easily procurable by Mr. Winans while in England, in 1830. Indeed Mr. Winans does not profess to have been the first inventor of an eight-wheel car, though Judge Nelson's decision seems to give him the exclusive right to use it *as a whole*. In respect to the carriages described in these treatises, it was confidently claimed on one side, and as confidently denied on the other, that they embodied the essential features of modern railroad carriages, so far as the claims under the patent were concerned. Drawings and models of the carriages described in these works were constructed, by each side, in conformity to the idea and interpretation of them entertained by the scientific experts and engineers examined and relied on as witnesses before the jury. Such a course of investigation constantly raised the questions: What were the essential principles of these carriages? what are the essential principles of the alleged invention of Mr. Winans? what are the essential principles of the cars in use on the New York and Erie Railroad? Upon these vital questions, it is unnecessary to say that no two of the very experienced, learned, and intelligent witnesses of opposite sides could agree; and it would be hardly too much to say, that no two of those examined by the plaintiff's agreed. These inquiries branched out into almost endless detail about scientific equivalents, analogous powers, and like means for like ends: but all ending alike in hopeless doubts and contradictions on any other theory than that founded on the sober facts of the case, that Mr. Winans had really invented nothing new. The most that can be said is, that he reinvented and modified an old device, and *did nothing more*. If new to him, it was not new to science nor in the experience of practical life. Such is a brief outline of the history and main features of Mr. Winans' celebrated litigation with the railroad companies and car-builders of the United States. It is perhaps a controversy without a parallel.

The case will probably be carried up to the Supreme Court of the United States, for argument of the questions of law raised in the exceptions to the charge of Judge Hall. If the rulings of the Judge are sustained, as I feel very confident they will be, the litigation will be at an end. If the Judge's opinion is overruled, the case will be sent back to be again tried before a jury. But, in that event, it by no means follows that the railroads will suffer a final defeat, for great confidence is felt that, on the facts alone, whatever construction may be given to the claim of the patent, the plaintiff must suffer a final defeat, before any honest and intelligent jury, having the whole history of the matter before them.

I should appear to claim what is not my due, by omitting to declare that the success of the defence is mainly to be attributed to the experience and ability of my associates in the trial, Mr. Hubbell, of Philadelphia, Mr.

Stoughton, of New York, and Mr. Whiting, of Boston. It is due also to Mr. Nathan Randall to state, that to his perseverance and energy in discovering and rendering available the evidence for the defence, and particularly in hunting up the old carriages, so long forgotten and left to decay, the railroads and car-builders of the country are largely indebted.

It can hardly be doubted that the successful resistance of this ambitious claim of Mr. Winans will exert a salutary influence, beyond the matters it involves. It may operate as some check upon the numerous extortionate claims founded on useless or pretended patents with which railroads, above all others, appear to be beset. It is well known that there few things about a railroad car or truck that is not the subject of several patents.

If a claim is made on a pretended patent and the road pays promptly, the chances are equal that the claim was wholly unfounded. If the company resists, an expensive law suit may be the result; and, perhaps, added to this a heavy verdict is given against the company by some jury, founded on the pretence that the Company had niggardly refused to purchase a patented improvement; when, in reality, the old structure was far superior to the new. It may be hoped that a successful defence of a claim, so confidently and ably urged, as that of Mr. Winans, will teach speculators in patents a little caution, and give those who are besieged by them a little courage.

This claim of Mr. Winans had peculiar features of aggravation, and involved on assurance perhaps unparalleled. For, after the railroads had paid large sums for patent wheels, patent springs, patent boxes, patent axles, patent bolsters, patent brakes, patent transom plates, patent ventilators, patent metal, and other patent fixtures of less note, quite too numerous to mention, Mr. Winans comes along and very coolly claims the "*car as a whole*" and \$100 per year for its use during the whole time that Railroad Companies had been adorning and improving it by purchase of all these expensive additions. Viewing the matter in this aspect, and giving the patent the interpretation claimed by the plaintiff, it was certainly desirable to wait until the car was improved to the greatest extent, before taking possession of it "*as a whole*." There is a degree of assured audacity about such a claim, that seemed to indicate that the time for absolute submission or resolute, manly resistance had arrived.

Those men who really invent something new and valuable are undoubtedly amongst the most useful citizens, and deserve every protection the law can give them. There is nothing in the result of this litigation that need discourage them. In saying this much, I have not intended to charge Mr. Winans with any want of sincerity in making his claim, or of honor in enforcing it. He, doubtless, believes himself the inventor of the car he describes, and thinks himself entitled to be paid for it. I make no charges against him except the want of that sound judgement and perception which the history of his litigation will warrant. He has exhibited an energy and strength of purpose that few men can look upon without admiration, mingled, indeed, with some degree of pain, that the declining age of a man of ample fortune and prosperous family, should be embittered by disappointments in the prosecution of a claim alike unfounded in law and in

justice. Being under the necessity of alluding to much of what is personal to Mr. Winans, I have felt called upon, in justice to him, to indicate my opinion of the general integrity of the motives with which he has maintained this great litigation.

Hoping, my dear sir, that this statement, which I have been compelled to sketch very hastily, may serve your purpose,

I am, very respectfully,

Your obt. servt.,

D. B. EATON.

From the New York Tribune, Sept. 5, 1856.

#### PACIFIC RAILROAD.

That our brethren on the Pacific are ultimately to be united to us by bonds of iron, we presume no intelligent man who has considered the march of internal improvement during the last half century can doubt. The circuitous, tedious, uncomfortable, expensive, unhealthy journey by either or by any route across the Isthmus of Darien, cannot be allowed to remain the most practicable and expeditious mode of transit from one side of our Union to the other. To-day, a citizen of Minnesota who may be impelled to remove his family to Oregon or Washington Territory, must traverse more than four times the actual distance which separates his present from his future home, in order to reach the latter. Half the white people now inhabiting our Pacific empire would gladly visit the homes of their youth if the cost in comfort, time, and money, of the journey, were sufficiently economized; thousands of the adventurous, or the discontented among us would look off on the Pacific, if ten days' easy riding across a diversified country, through haunts not yet deserted by the Indian and the buffalo, would carry them thither at a cost of not more than a hundred dollars. If a good railroad from St. Louis to San Francisco were to open next April, we believe it would increase the national wealth by the full amount of its cost in every three years of the next thirty, while yielding, if well-managed, a magnificent income to its stockholders.

That railroad will yet be built; the only question is—shall its credit and its benefits enure to the present generation? or shall we doze on, and leave it to be built by our more enterprising posterity? Shall we hazard the alienation of our brethren on the Pacific, calculating that we may win them back after they shall have been compelled, by their isolation and disadvantages, to fall away from us? Is a nation that must buy or beg the privilege of carrying the mails between its chief commercial cities through remote and semi-barbarous foreign countries, a thousand miles out of the direct line between those ports, really and properly united?

We believe the Pacific Road ought to be commenced at once, and constructed so fast as means can be obtained. We believe the Federal Government ought to retrench its absurd expenditures for army, navy, &c., and devote at least ten millions per annum to making a track for the iron horse across the western half of the continent, through the gorges of the Rocky Mountains, over the passes of the Sierra Nevada, from the Mississippi to the Sacramento. This would be a practical job of Union saving—unlike most jobs undertaken on that pretext—and one every way beneficent. Even if it should be arrested midway, by war or some other calamity, it would still be worth at least its cost



and would still insure a speedy and safe overland transit for persons at least.

We rejoice that the People's Convention at Philadelphia so frankly and heartily declared—alike by its platform and its candidate—for the Pacific Railroad. Other parties may deal in vaporous generalities, or only take a position one day to desert it in terror on the next; but our support of the great enterprise of the age was and is spontaneous, hearty, unanimous, unmistakable. With the Pathfinder in the Presidential Chair, the path itself—in pioneering which he has so persistently courted perils, endured hardships, and rejoiced in sacrifices—cannot fail to be made plain.

#### A RAILROAD TO THE PACIFIC.

The *N. O. Picayune* condenses a late letter written by Mr. Coleman, agent of the Vicksburg, Shreveport and Texas Railroads, addressed to the two Mississippi members of Congress. Mr. Coleman thinks that if the bill of Senator Weller were passed with some amendments, it would make a complete road across the continent in a very few years, connecting it with the Vicksburg and Shreveport Railroad, chartered by Texas and also under way. We quote from the *N. O. Picayune* as follows:

The Vicksburg Road is 190 miles in length, commencing on the Mississippi river, opposite to Vicksburg, running through North Louisiana and terminating on the Texas line, west of Shreveport. The capital stock is \$4,000,000, of which there are private subscriptions to the amount of \$900,000, and the State of Louisiana had authorized a subscription of \$800,000. The whole road is under contract to an enterprising company, with large means, who receive pay for half the work in stock of the company. The road is sure to be completed. At the border of Texas it unites with the Texas Western Railroad, which has a grant of sixteen sections of land for every mile of road completed—a grant which is so large and valuable as to be considered sufficient, under good management, to build the road. Besides, there are calculations upon the improved value of the lands as the road advances, and on the aid of the general government in lands, and the direct aid of the State in money and lands, if more is needed. The means are thus said to be secure for the completion of a railroad for 999 miles, along the line of 32° of north latitude. If that route were adopted at once, and continuance and completion of the line to the Pacific, the means for the 999 miles would rise in value and demand as to be abundant, if not redundant.

From El Paso, the western terminus of the Texas Road, to the Colorado in California, across New Mexico and the Gadsden purchase, is, according to the official reports, 505 miles, and thence across the State of California to San Diego, on the Pacific, not over 200 miles. For this last section the State of California is expected to provide, and is able and willing.

The whole distance by this route is therefore about 1,690 miles, of which the States and citizens of Louisiana, Texas, and California will have provided for 1,465 miles, leaving only 505 miles through the territories of the United States, to be built by the government of the United States.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, } .....ASSOCIATE EDITORS.  
T. WRIGHTSON, }

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects: and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance*.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 60 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improve ments, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, OCTOBER 7, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD.....,..... EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR.

CINCINNATI, - - - TUESDAY, OCT. 7, 1856.

#### PROFITS OF THE PACIFIC ROAD.

There is an idea abroad that the Pacific Road will not have *business* enough to be profitable! Surely they who think this have not recollected that the Pacific Road will be without a competitor between ocean and ocean. It will be granted at once that whatever business arises between the Atlantic and Pacific sides of the United States must of necessity go on this road; at least all but a small portion of the freight must; for what could interfere with it? The Cape Horn route could not, for that is sixteen thousand miles around, and will require months of time; the Panama route will not, for there must be a voyage of three thousand miles down one side, then a transshipment over a railroad, then another transshipment, and another voyage of two or three thousand miles. All this, too, requires more than thirty days, while the railroad route will require but six days.

The Nicaragua route will not interfere with it, for the difficulty and delay there are still greater. In fine, it is not possible for the Pacific R.R., when once constructed, to have a competitor which shall seriously interfere with its business. The question, then, is simply and only whether there is *business enough* between the two oceans to be profitable. Well, the best way in which we can judge of this is by considering the business which is *actually done*. We need not do this in detail, but may be satisfied by considering it in gross. For example, look at the vessels which, with all the present advantages, still go round Cape Horn. What are they doing but transacting the business between the Pacific and the Atlantic? Next let us go to the Panama route. Is not the immense line of Pacific ships, between the Atlantic and the Pacific, profitable? Go to the Panama Railroad—is not that profitable? Well, it is perfectly certain that if the Panama Railroad is profitable, the Pacific Road will be. But, one will say, that does not follow; the Panama Road is a short one, and the Pacific Road will be a very long one. That is true; but it is not the length of the road, but the *business* on it, which makes it profitable. If there is *business* enough to make the Panama Road profitable, then the Pacific will be; because, *first*, the whole of that business must go over the Pa-

cific; and *secondly*, the charge will be as much greater as the length will be. If, then, that business is *enough* to make an hundred miles profitable, it is enough for a thousand, when it must all go over that thousand.

We see no reason, founded upon existing facts, why a Pacific Road should not be *per se* profitable. It has intrinsic merits which no other road in the world has. Besides this, the settlement of the country, which it will produce, will rapidly augment business from year to year. If there were no other business for it, but what it will itself create, that alone would make it profitable.

#### THE EFFECT OF THE NEW IMPROVEMENTS IN IRON ON THE PACIFIC ROAD.

The new discovery in the manufacture of iron will reduce the price of bar iron *one-half*. If this be so it will be a matter of great interest in the construction of the Pacific Road. The cost of freight, commission, interest, &c., being about one-third, the saving actually made will be *one-third* of the final cost. A railroad provided with heavy T rail requires about 100 tons per mile, and in Texas it will cost \$65 per ton; so that there will be a saving of \$22 per ton, or \$2,200 per mile. In 1800 miles there will be a *clear saving of four millions of dollars*. This may be estimated as quite as good as a grant of the same amount of money. With a saving of \$4,000,000, a grant of Texas bonds to the amount of \$5,000,000, and \$30,000 per mile in land, it is not easy to see why the great Pacific Road, in Texas, should not go on with rapidity. It cannot be long before capitalists will see the immense opening for speculation now made by the Texas Pacific Road. In the particulars to which we refer there is not the least fiction. The grants and advantages of the Pacific Road are real, solid, substantial.—The lands, the grants, the economy of construction, and the prospects of great profits, are all positive advantages, not realized by any other road in the country.

ILLINOIS RIVER RAILROAD.—The people of Cass, Tazewell, Mason, Green and Jersey Counties, are thoroughly aroused to the importance of building the Illinois River Railroad. The following are the amounts at present subscribed:

|                      |           |
|----------------------|-----------|
| Tazewell County..... | \$150,000 |
| Mason ".....         | 80,000    |
| Cass ".....          | 120,000   |
| Total.....           | \$350,00  |

It is fully expected that Morgan, Green, and Jersey Counties will swell this amount to \$600,000 during the next two months.

#### TEXAS LOAN BILL.

We give below the Loan Bill, which has recently passed both houses of the legislature in this state, and become a law. This bill provides for the investment of the special school fund of the State of Texas in the first mortgage bonds of her own roads. By the provisions of the act, most of the incorporated railroad companies of the state are to receive *six thousand* dollars per mile, on the completion of the first section of twenty-five miles, and the grading of the second twenty-five miles; after that, on the completion of sections of ten miles each, when graded and ready for the ties and superstructure. The minor details of the bill provide for the securing of the loan and the payment of the interest.

In passing this act, Texas has taken the initiative, which will soon be followed by capitalists. Were it only a moral support that would be gained to her roads from this measure, its benefits would be immense. But as it is an actual loan, it is really the best thing Texas has ever done for her roads. No state needs railroads more than Texas. With an immense and fertile territory, with unbounded capacities for the cultivation of the most valuable agricultural productions, Texas needed but the facilities for the transportation of her products, to enable her to advance with giant strides in wealth and importance. Such facilities she must soon have, and we may then look for another example of rapid and permanent development.

#### AN ACT

To provide for the investment of the Special School Fund in the Bonds of Railroad Companies incorporated by the State.

SECTION 1. Be it enacted by the Legislature of the State of Texas: That the Governor, Comptroller, and Attorney General, shall *ex officio* constitute a Board of School Commissioners, whose duty it shall be to draw from the Treasury the Special School Fund created by the Act of January 31st, 1854, entitled an Act to establish a system of Schools, and such other amount as may hereafter be added to said fund, and invest the same as provided in this Act. And said Board shall annually report to the Governor its acts and proceedings relative to the said school fund, which shall be laid before the Legislature at each and every session thereof.

SEC. 2. That the five per cent. indemnity bonds belonging to said special school fund may and shall be loaned to legally incorporated railroad companies in this State at their current value, including premium; provided said value shall not be less than par, otherwise at par, for the term of ten years from the date of said loans, at an interest of six per cent. per annum, payable annually, upon



the terms and conditions specified in this Act; provided that one-half of said fund shall be loaned to companies whose works lie east of Trinity river, and the residue to companies whose works lie west of said river.

SEC. 3. Said Board of Commissioners is hereby authorized to invest said funds by loaning to any such company which has been chartered for the purpose of building a railroad in this State, the sum of six thousand dollars per mile for each and every mile of railroad constructed as hereinafter provided; said loans to be secured by the bonds of such companies for said principal and interest, made and executed to the State of Texas in the corporate name of such company, signed by the President, and countersigned by the Secretary or Treasurer, under the seal of such company: which bonds shall constitute a lien upon the road and chartered rights of such company, including the road bed, right of way, grading, bridges, iron rails, equipments, and masonry, and upon all the stock subscribed for in said companies, all the depots and depot stations, and all the property owned by such company, as necessary for its business; and the State of Texas, upon the execution of said bonds, and by virtue of the same, shall be invested with said lien or mortgage, for the payment of said bonds and the interest thereon, as the same becomes due, without the necessity of any deed, especial contract, or act of registration.

SEC. 4. Said Board of Commissioners shall loan said sum of six thousand dollars for every mile of road completed, to any such company as shall have completed in a good and substantial manner, and furnished ready for actual use a continuous section of twenty-five miles of the road of said company, and graded an additional consecutive section of twenty-five miles, ready for the cross-ties and other superstructure: and the same amount per mile for every additional consecutive section of ten miles which shall be so completed and graded ready for the ties and other superstructure; and the same amount per mile for every section of ten miles which shall be so completed and furnished ready for use upon any railroad which shall be a continuation of or connection with any other railroad running from any adjoining State or Territory, in the State of Texas; provided said road shall, together with such continuation or connection, be completed at least twenty-five miles in length; and provided that before said loan is drawn upon any completed section of ten miles, an additional consecutive section of ten miles shall be graded, ready for the ties and other superstructure.

SEC. 5. That upon the application of any such railroad company to said Board of Commissioners for said loan, and its representations that section fourth of this Act has been complied with, said Board of Commissioners shall appoint some competent engineer, who shall, at the expense of the company, examine the road of said company, and make a full report upon the condition of the same under oath, and shall report all matters pertaining to the business of said company which he may deem useful to said Commissioners, in ascertaining the true condition of said road and company; and upon being fully satisfied that any section or sections of said road have been contracted and completed as provided in the fourth section of this Act, and that said section or sections are not subject to any lien whatever other than such as may be created by this Act in favor of the State, said Board shall

draw a warrant on the Treasury of the State, in the name of said company, against said special school fund, for such amount of said bonds as it may be entitled to under the provisions of this Act, which warrant shall state on account of what work it is drawn, shall be signed by said Board of Commissioners and countersigned by the Governor, and delivered to the President, or the duly authorized agent of said company.

SEC. 6. That upon the presentation of such warrant or warrants to the Treasury of this State, the amount of said indemnity bonds called for in the same shall be delivered and transferred according to law, to the President or authorized agent of said company, his receipt taken therefor, and the same charged to the special school fund.

SEC. 7. That before said Board shall deliver to said company said warrant or warrants upon the Treasury, it shall require said company to execute and deliver into the Treasury the bonds of said company for said loan or loans in sums of not more than one hundred and fifty thousand dollars, and not less than fifty thousand dollars each, payable to the State of Texas ten years after date, together with coupon bonds for the six per cent. interest thereon, payable annually as above stated; which bonds shall be executed in the mode prescribed in the third section of this Act, and shall be made payable at the office of the Treasurer of the State, and which shall be a lien in favor of the State, as specified in the third section of this Act, and shall have a priority over all other claims against said company. That in addition to the annual interest of six per cent., every company accepting any loan under the provisions of this act, shall pay annually at the expiration of each year from the date of the loan, the further sum of two per cent. upon the amount of the loan into the Treasury of the State, for the purpose of establishing a sinking fund, to be applied towards the payment of the loan at its maturity; and the amount so paid for the purpose of such sinking fund, with their accumulations, shall be credited to such railroad.

SEC. 8. And after the execution of said bonds upon said first section, or any subsequent constructed section, it shall not be lawful for said company to give, create, or convey to any person or persons, or body corporate whatever, any lien, incumbrance, or mortgage of any kind which shall have priority over, or come in conflict with the lien herein secured, and any such lien, incumbrance, or mortgage, shall be null and void as against said lien or mortgage in favor of the State.

SEC. 9. That it shall be the duty of any such company, as the interest becomes due upon said bonds, executed as aforesaid, to deposit the same in the Treasury of the State, which amount shall be credited to the special school fund, and shall be subject to the immediate appropriation for school purposes, as provided by law. And all railroad companies shall pay said interest, so due by them, annually, on the first day of March, out of the first receipts arising from said road, independent of any expenses or other liabilities of said roads, and the coupon bonds of such companies, so satisfied, shall be cancelled and delivered up.

SEC. 10. Whenever any of the bonds of said company for the principal loaned thereon shall become due, said company shall deposit said sums so due in the Treasury of the State, and said bonds, when so paid, shall be

cancelled and delivered up, and said principal sums, so returned into the Treasury, shall be credited to the special school fund, and subject to reinvestment by said Board, as provided in this Act.

SEC. 11. That if any such company shall fail or refuse to pay said principal or interest bonds, from time to time, as the same shall become due, the road of said company, together with all the rights and property of said company, specified in section third of this Act, shall be sold, or caused to be sold by the Governor of the State, for the satisfaction of said bonds so due, as well as the bonds of said company which may have been given, under this Act, to the State; and the whole of said bonds shall be deemed due if said sale takes place, and the proceeds of such sales shall be deposited in the Treasury and credited to the special school fund.

SEC. 12. That upon the failure of any such company to pay said principal or interest bonds, as required in this Act, it shall be the duty of the Governor, after the expiration of thirty days, to cause notice of the sale of such road to be advertised in some newspaper published at the seat of government for the term of three months; and after due notice has been given, shall cause the entire road, together with all the rights and property of said company specified in the third section of this Act, to be sold at public auction to the highest bidder, for cash, at the door of the capitol of the State, and at the time specified in said advertisement; provided, that if the principal or interest bonds which may have become due before the giving of said notice, and all costs attending said proceedings shall be paid before the day of sale, then said proceedings for sale shall be stopped.

SEC. 13. In the event of any sale of any railroad under the provisions of this Act, it shall be the duty of the Governor, either in person or by agent, to attend such sale, and protect the interest of the special school fund, and shall, if necessary to protect said interest, buy in said road, with all the rights and property belonging to said company, in the name of the Board of School Commissioners; provided, he shall not bid more than the amount of the bonds of said company, with the interest due thereon, and the cost and expenses attending said sale; and in the event of any such purchase in the name of the Board of School Commissioners, the Governor shall appoint a receiver, who shall be required to enter into such bonds as may be required by the Governor, and whose duty it shall be to take immediate possession of, and to control and manage said road, under direction of the Governor, until otherwise disposed of by law; the said Board of School Commissioners shall retain in the Treasury of the State, charged to the credit of the school fund, five per cent. of the United States bonds of all sums loaned as provided in this Act, as a sinking fund, to be used for the *pro rata* appropriation annually due to the several counties for school purposes, in the event of the interest due to the school fund, after the sale of any railroad, shall not be paid by said road.

SEC. 14. The State of Texas expressly reserves the right to enact hereafter all such laws as may be deemed necessary to protect the interest of the special school fund, in securing the payment of said bonds, and in enforcing the lien reserved thereon.

SEC. 15. That the provisions of this Act shall not extend to any railroad company



which may be entitled to receive from the State a larger grant of land than sixteen sections of six hundred and forty acres to the mile for the construction of such road, nor to any road for more than a single trunk, with the necessary turn-outs, nor to any branch road, nor to any road which shall not be commenced and prosecuted as required by the provisions of its charter; provided, that no company shall be entitled to a loan under this Act for any section of road between the cities of Galveston and Houston, or Galveston and the crossing of Buffalo Bayou, near the city of Houston.

SEC. 16. That no railroad which is less than fifty miles in length according to the terms of its charter, shall be entitled to the benefits of this Act, except on the following terms: The Brownsville and Rio Grande Railroad shall be entitled to the benefits of this Act on its entire length as soon as it is completed from Point Isabel to Brownsville; and any other railroad which is less than fifty miles in length, according to the terms of its charter, whenever one-half of its entire length has been completed and put in running order and the other half has been graded ready for the ties and other superstructure, shall be entitled to said loan on said completed section, which shall be expended for the completion of the entire road; and in no event shall said road be entitled to said loan on more than one-half of its entire length.

SEC. 17. If any person making an affidavit as herein required, shall knowingly swear falsely, he, upon conviction thereof before any court of competent jurisdiction, shall suffer all the pains and penalties of perjury.

SEC. 18. That it shall be the duty of any railroad company receiving the benefits of this Act to make, through its proper officers, an annual report under oath to the Governor, containing a full and complete statement of the affairs of said company, together with the receipts, expenditures, and liabilities of said company, and with such other facts as may be necessary under the general laws regulating railroads and said railroad companies.

SEC. 19. That every railroad company, before it shall be entitled to the privileges of this Act, shall establish upon the line of its road an office, where books shall be kept, showing the state of its stock and general accounts; and where the company may be legally served with all notices and process; and the superintendent, or principal manager of the transportation business of the road shall reside in this State; and whenever a majority of the shares in the capital stock of the company shall be owned in this State, a majority of the Directors, including the President, shall be residents thereof; and that this Act take effect and be enforced from and after its passage.

Passed August 13th, 1856.

DEPARTMENT OF STATE, }  
AUSTIN, Texas, Aug. 20, 1856.

I, the undersigned, Secretary of State of the State of Texas, hereby certify that the writing contained on the foregoing eleven pages hereto attached is a correct copy of the original enrolled Act, now on file in this Department.

Given under my hand and the seal of the Department, at the city of Austin, this, the 20th day of August, A. D. 1856, and of the independence of Texas the twenty-first year.

[L. s.] EDWARD CLARK,  
Secretary of State.

#### THE CONDITION OF THE RAILROAD INTERESTS.

With twenty-four thousand miles of railroad in this country, and all of it so recent in construction as to furnish little actual experience, it is not surprising that there are great changes going on in the management and the results of the system. Some of them are so obvious, and the experience so valuable, that they should be put on record, as instructive for the future.

1. That railroads, when complete, even with a single track, *cost much more than was at first supposed*, is now quite obvious. A railroad may, for example, in a flat country, be made passable, with a locomotive, for \$20,000 per mile; and because the locomotive could be set going on it, that was the *estimated cost*; but that road will never be *complete* under \$35,000 per mile. In a hard country, or with an entrance to a great city, of course it will be much more than that. At present, the cost of some of the most important roads has been as follows:

|                           |                    |
|---------------------------|--------------------|
| New York Central.....     | \$70 000 per mile. |
| Pennsylvania Central..... | 70 000 "           |
| Little Miami.....         | 40 000 "           |
| Georgia Central.....      | 20,000 "           |

Now each of these roads cost, when it was first put in operation, but a little more than half this sum. The chief sources of expenditure over the original cost were:

(1.) Relaying; for till very recently all American railroads were laid with light iron, but must now have very heavy iron, to meet the wear and tear of increased freights.

(2.) Increased equipment; for the business became much greater than was anticipated. More locomotives, more cars, more machinery of all kinds were required.

(3.) Increased conveniences became necessary; for the road with a large business must have machine shops, depots, and conveniences of all sorts.

2. The railroad business has *enormously increased*. No man in the United States, ten years since, expected railroad business to be what it is. Indeed no adequate idea could be formed of the capacity and power of a railroad. It was first assumed that they could carry *no freight*, but would be profitable for passengers on long passenger routes. Next, it was deemed perfectly certain that their freight business would be confined only to *light traffic*, and canals must yet be made to carry heavy produce. But even the last has been exploded. Most railroads now make most of their profit from freight traffic. One direct consequence of this is in the increased expenses to which we have referred; for such a heavy business requires rails and machinery of a much stronger and more expensive character.

3. Another idea was that a *through* business was the one which furnished the profit;

and accordingly the prospectus of every new railroad enterprise for the last five years has announced that it was certain of a great *through* business; and in operating roads this *ignis fatuus* has almost bankrupted many of them. The shadow was taken for the substance. But it is now discovered and proved that in nine roads out of ten the best and most profitable business is a *local traffic*. To this there are exceptions, but they are peculiar cases, and in general it is the interest of railroad companies to cultivate their *local traffic*.

4. As a consequence of this increase of business, and of local traffic, the gross receipts of railroad companies have been immensely increased from year to year. Take the following examples, which are put down in round numbers, and are near enough for comparison:

#### NEW YORK & ERIE.

|                         |                |                       |
|-------------------------|----------------|-----------------------|
| In 1852.....            | \$3,318,000    |                       |
| In 1853.....            | 4,321,000..... | Increase 31 per cent. |
| In 1855.....            | 5,488,000..... | " 26 "                |
| In 1856.....            | 6,300,000..... | " 13 "                |
| From 1852 to 1856.....  |                | " 90 "                |
| Per annum, average..... |                | " 22 "                |

#### LITTLE MIAMI R. R.

|                         |              |                       |
|-------------------------|--------------|-----------------------|
| In 1852.....            | \$526,000    |                       |
| In 1853.....            | 667,000..... | Increase 26 per cent. |
| In 1854.....            | 721,000..... | " 8 "                 |
| In 1856.....            | 860,000..... | " 20 "                |
| From 1852 to 1856.....  |              | " 60 "                |
| Per annum, average..... |              | " 15 "                |

These examples correspond with those of most of the large roads. The result is that the gross receipts of the roads have exceeded anything that has been conceived. In 1856 this is more manifest than ever. The average *increase* of receipts in 1856, on the old and good road, will approach 20 per cent.; so that in this respect 1856 will be the most prosperous railroad year ever known.

5. On the other hand, the *net* proceeds have also increased largely; for, as the roads are older and have more experience, they are more economized. There are many expenses which are reduced by the permanency and self-adjustment of the roads.

6. The *ultimate consequence* of these changes and principles is that the *intrinsic value* of railroad property is rapidly and largely increased. It is true that the *cost* of the roads has been enlarged, and that much of the income of the roads has been absorbed in enlarging the capital; but it is also true that this enlargement has given far greater power to the machine, and that its work is far more profitable. Although, then, the fancy value of railroad stock may have diminished, and it may not be so marketable, yet it is most undoubtedly worth a great deal more as a permanent investment. The year 1856 alone has added many per cent. to the value of stock in all the solvent railroad companies of the country. The time is near when most of them will pay large cash dividends; and when they do the stocks will all fly up, as bank stocks have from the same cause.



## RAILROAD IRON MANUFACTURE.

*Editors of the Railroad Record.*

GENTLEMEN:—The recent improvement in the conversion of iron from the blast furnace into malleable iron by Mr. Bessemer in England, has attracted much attention. If it can be carried out in practice as it seems practicable theoretically, it will work a great change in the manufacture of iron, and be beneficial both to the iron master and to the public.

The improvement consists, 1st, in the rapid removal of the carbon of the iron, by means of a current of air forced through the melted metal; and 2d, the subsequent removal of the earthy materials, silicates, etc., combined with the iron after the carbon has been removed by a prolonged action of the current of air oxydizing a portion of the iron, and this oxide combines with the silica and other materials, and forms slags that separate from the metal, and leave it in a highly refined state. This is what is claimed by the discoverer of this method, and it seems not unreasonable that it can be carried out in practice.

The same result has been attained more slowly, perhaps not as perfectly, at a greatly increased cost by the various methods of refining iron, and by the puddling and boiling processes, and by the various mechanical operations of squeezing, hammering, rolling, etc.

The iron ore linings of the boiling furnaces, and the addition of finery cinder, and of water in the puddling and boiling furnaces, produced a similar effect of removing carbon, by the oxygen of the iron ore and of the water, taking carbon from the iron, causing in both cases the extrication of carbonic acid and carbonic oxide. The iron ore and finery cinder added, increased the quantity of iron and diminished the loss incident to the conversion of the pig iron into malleable metal. The finery processes also, in one case exposing the broken pig metal to a current of air at a high temperature, and in another, exposing the melted pig iron to a blast of cold or of hot air from tweer-pipes directed downwards upon its surface, are methods long followed, and involve the same principle as the improvement recently made, and also the same in principle as the methods in the boiling and puddling furnaces; but the time, labor, expense, and the fuel for these various operations for the conversion of pig iron to malleable iron, were greatly more than by this improvement, if it should prove well in practice.

This method seems a natural result of an application of the principles involved in the various modes of conversion of pig iron into malleable iron heretofore practiced, and the only singularity is, that it has not earlier been thought of and used.

This method, if successful, will greatly diminish the cost of conversion, will do away with the necessity of boiling furnaces, will enable the rolling mills to operate on much

larger quantities of iron, make much larger masses of metal of uniform quality in single pieces without welding, and will enable the blast furnaces to convert their metal directly into merchant bars or rail bars, if they prefer to do so, and will induct a new era in the railroad iron manufacture.

In all blast furnaces there is a large surplus of heat that can be applied for steam power for rolling the iron, if rolls and suitable machinery be added. The heavy capital necessary for rolling mills for merchant iron, and for rail bars, and the fact that all rolling mill companies in the United States have gone into the iron market for their pig metal at the high market rates, are circumstances that have prevented, in a high degree, the manufacture of rail bars. If iron companies have both their own blast furnaces and their rolling mills, they can make rail bars as cheap as in Wales or Staffordshire, and can give as much credit on bonds as the English or Welsh iron masters. The same amounts now paid in cash for duties, freight, insurance, agencies, and charges by our railroad companies, if paid to our iron masters having their own blast furnaces and rolling mills, would pay the cost of the production of the rail bars,\* and the railroad bonds now given to English and Welsh iron masters, would remain as profit in the hands of our own citizens, would retain the interest money at home, and would be a basis of credit, or of discounts in bank, if they needed bank accommodations.

The vast fields of our iron ore and coal deposits, capable of rapid and easy development, await only the enterprise of our citizens, and the application of capital. The recent rapid development of the manufacture of iron with anthracite and bituminous coal in Pennsylvania—with bituminous coal in Maryland—and the dawn of the same in Ohio, have done away with the prejudices of many of our iron masters, who see not only that iron can be made with mineral fuel, but that good iron for foundry uses, for merchant irons, and even for horse-shoe nails can thus be made. Several stone coal furnaces are now in operation in Ohio, and others are building, and the capacity of the iron region of Ohio is not less than for 1000 stone coal furnaces for 2000 years.

The cost of rail bars made of stone coal pig iron by the methods now employed varies from 32 to 38 dollars per ton, where the profits of the pig metal manufacturer are not included, but interest on capital, taxes, and wear and repairs are included.

Each railroad company could have its own furnaces and rolling mill for rail bars connected in one establishment for the production of its own rails, or to supply the deterioration of their rails already laid. A railroad of 100 miles in length requires about 10,000 tons of

*Vide Railroad Record, Vol. 2, p. 569, 582, 590.*

rails to lay the track, and an annual average of 1000 tons annually, to supply the deterioration and wear of the track. Several single roads of the United States of 300 or more miles long, require an annual supply of 3000 or more tons of rails, and are supplied from the markets at \$200,000 to \$250,000 per annum. With their own mills and furnaces, they could be supplied at half that cost. The investment of \$300,000 in the mills, and furnaces, and land, would in some instances save nearly the whole cost of the investment to the company, in a single year, and in future years make a large saving in the outlay for iron, and could make a large profit for the company, by selling their surplus production at the market price to other railroad companies.

W. W. MATHER.

# PROCEEDINGS OF THE GENERAL RAILROAD CONVENTION, HELD AT CLEVELAND, OCT. 1, 1856.

Wednesday, October 1st, 1856. 10 A. M. The meeting was called to order by the chairman, Homer Ramsdell, Esq., of the New York & Erie Railroad. Mr. Wilkinson of the Michigan S. & N. Indiana Railroad, Secretary.

On motion, Mr. H. C. Marshall of the Cleveland, Columbus & Cincinnati R. R., was also appointed Secretary.

## LIST OF DELEGATES.

NEW YORK CENTRAL R. R.—Erastus Corning, Pres't; Dean Richmond, Vice Pres't; S. Drullard, General Freight Agent; H. W. Chittenden, Asst. Sup't.  
 NEW YORK & ERIE R. R.—Homer Ramsdell, Pres't; B. W. Blanchard, General Freight Agent; C. B. Greenough, General Ticket Agent; B. F. Smith, General Agent.  
 MICHIGAN SOUTHERN & NORTHERN INDIANA R. R.—John Wilkinson, Pres't; Sam Brown, General Sup't; Alfred Wilkinson, Asst. Sup't; Geo. M. Gray, General Agent.  
 MICHIGAN CENTRAL R. R.—Geo. Williams, jr., General Agent; Thomas Frazer, Ticket Agent.  
 BUFFALO & ERIE R. R.—Geo. Palmer, Pres't; D. Richmond, Vice President; C. H. Lee, Director; C. C. Dennis, Sup't.  
 CLEVELAND, COLUMBUS & CINCINNATI R. R.—L. M. Hubby, Pres't; E. S. Flint, Sup't; A. Stone, jr., Director; A. Hills, General Freight Agent; H. C. Marshall, General Ticket Agent.  
 LITTLE MIAMI R. R.—John Kilgour, Secretary; W. H. Clement, Sup't; P. W. Strader, General Agent.  
 COLUMBUS & Xenia R. R.—Wm. Dennison, jr., Pres't; Robert Neil, Director.  
 BELLEVILLE & LEXINGTON LINE.—John Brough, Pres't; E. S. Spencer, General Freight Agent; John Canby, Sup't; J. F. Boyd, General Ticket Agent.  
 INDIANA CENTRAL R. R.—John S. Newman, President; James M. Smith, Sup't; James Hooker, General Freight Agent.  
 CLEVELAND & TOLEDO R. R.—E. B. Phillips, Sup't; L. D. Rucker, General Agent.  
 CLEVELAND & ERIE R. R.—Wm. Case, Pres't; H. Nottingham, Sup't.  
 CENTRAL OHIO R. R.—D. P. Gray, General Freight Agt.  
 WESTERN R. R., Mass.—H. Gray, Sup't.  
 BOSTON & WORCESTER R. R.—H. E. Sargent, General Freight Agent.  
 TOLEDO, WABASH VALLEY & WESTERN R. R.—L. Tilton, Vice President.  
 HUDSON RIVER R. R.—Samuel Sloan, President; M. L. Sykes, Vice Pres't; E. M. Gilbert, General Freight Agent.  
 PENNSYLVANIA CENTRAL R. R.—H. J. Lombaert, Sup't; H. H. Houston, General Freight Agent.  
 PITTSBURG, FT. WAYNE & CHICAGO R. R.—G. W. Cass, Pres't; J. J. Houston, General Freight Agent.  
 CLEVELAND & PITTSBURG R. R.—C. W. Rockwell, Pres't; J. Durand, Sup't.  
 TERRE HAUTE & ALTON R. R.—B. F. Fifield, General Ticket Agent.  
 STEUBENVILLE & INDIANA R. R.—G. W. Fulton, Sup't.  
 NORTHERN CROSS R. R.—S. M. Burnham, General Ticket Agent; W. G. Bullions, Sup't.  
 GREAT WESTERN (CANADA) R. R.—W. C. Stevens, General Agent.  
 CINCINNATI, HAMILTON & DAYTON R. R.—S. S. L'Hommiedieu, Pres't; J. C. Wright, Director.  
 HAMILTON & BATON R. R.—S. S. L'Hommiedieu.  
 MAN RIVER & LAKE ERIE R. R.—R. E. Runkle, Pres't.  
 PHILADELPHIA, WILMINGTON & BALTIMORE R. R.—Sam. Calhoun, General Freight Agent.  
 CHICAGO, ALTON & ST. LOUIS R. R.—H. A. Gardner, Chief Engineer.  
 MADISON & INDIANAPOLIS R. R.—F. H. Smith, Pres't.



On motion of Mr. George Williams of the Michigan Central R. R., it was *Resolved*, That this meeting adjourn to 3 P. M.

#### AFTERNOON SESSION.

Convention met pursuant to resolution at 3 o'clock.

On motion, the minutes of the Cincinnati Convention were read and approved.

On motion of Mr. C. C. Dennis of the Buffalo & Erie R. R., That a committee be appointed to take in hand the Freight Tariff, and report on the same. Carried.

The President offered a letter from the President of the Baltimore & Ohio R. R., in relation to the railroad business between the East and the West. Read by Mr. Gray. On motion of Mr. Sloan, *Resolved*, That the letter be laid upon the table. Carried.

The following gentlemen were appointed the

#### COMMITTEE ON FREIGHTS.

Mr. Drullard, New York Central R. R.  
Mr. Blanchard, New York & Erie.  
Mr. Houston, Pennsylvania.  
Mr. Houston, Toledo, Fort Wayne & Chicago.  
Mr. Gray, Central Ohio.  
Mr. Brown, Mich. S. & N. Indiana.  
Mr. Williams, Michigan Central.  
Mr. Hooker, Ind. Central & Dayton & Western.  
Mr. Spencer, Bellefontaine & Ind., and Indianapolis, Pittsburg & Cleveland.  
Mr. Hills, Clev. Col. & Cincinnati.  
Mr. Sargent, Boston & Worcester & Western.  
Mr. L'Hommiedieu, Cin. Ham. & Dayton.  
Mr. Starin, Buffalo & Erie.  
Mr. Phillips, Clev. & Toledo.  
Mr. Mulford, Hudson River.  
Mr. L. Tilton, Lake Erie, Wabash Val. & Western R. R.

On motion of Mr. Dennis, *Resolved*, That a committee on Time Tables be appointed, also to inquire into the expediency of reducing the number of trains.

The following gentlemen were appointed the

#### COMMITTEE ON TIME-TABLES.

Mr. Richmond, New York Central R. R.  
Mr. Ramsdell, New York & Erie.  
Mr. Sykes, Hudson River.  
Mr. Dennis, Buffalo & Erie.  
Mr. Clemeuts, Little Miami & Col. & Xenia.  
Mr. Brough, Bellef. & Ind. and Ind., Pittsburg & Cleveland.  
Mr. Wilkinson, Mich. S. & N. Indiana.  
Mr. Stevens, Great West'n R. R., Canada West.  
Mr. Gray, Western R. R.  
Mr. Williams, Mich. Central.  
Mr. Lombaert, Penna. Central.  
Mr. Cass, Toledo, Ft. Wayne & Chicago.  
Mr. L'Hommiedieu, Cin., Ham. & Dayton.

Mr. Brough introduced the following resolution which, on motion of Mr. Dennison, was referred to a committee of five.

#### COMMITTEE ON MR. BROUGH'S RESOLUTION.

Mr. Brough, Bellefontaine & Ind., and Indianapolis, Pittsburg & Cleveland.  
Mr. Dennison, Columbus & Xenia.  
Mr. Wright, Cin., Ham. & Dayton.  
Mr. Newman, Ind. Central & Dayton & West'n.  
Mr. Dennis, Buffalo & Erie.

On motion of Mr. C. C. Dennis, the convention adjourned to meet at 7.30 P. M.

#### EVENING SESSION. 7.30 P. M.

The convention met pursuant to adjournment. The committees were not ready to report.

On motion of Mr. Sloan, the convention adjourned till 9 A. M., October 2d.

#### THURSDAY, OCTOBER 2ND.

Convention met at 12 M.

The committee on Time-Tables reported a Time-Table. The report of the committee was accepted and action postponed to 3 P. M.

Mr. Sloan brought up the communication of the Baltimore & Ohio R. R. Mr. Brough moved that it be referred to the freight committee. Adopted.

On motion of Mr. Dennison, the convention adjourned to meet at 3 P. M.

#### AFTERNOON SESSION, OCT. 2ND.

Convention met pursuant to adjournment at 3 P. M.

Mr. Sloan moved the adoption of the report of the committee on Time-Tables. Carried.

#### REPORT OF THE COMMITTEE ON TIME TABLES.

##### EASTWARD.

##### CINCINNATI EXPRESS.—

Leave Cincinnati at 6 A. M.  
Arrive at Cleveland at 2.40 P. M.  
Leave Chicago at 8 P. M.  
Arrive at Cleveland at 2.30 P. M.  
Leave Cleveland at 3.20 P. M.  
Arrive at Buffalo at 10.10 P. M.  
Leave Buffalo at 10.45 P. M.  
Arrive at Albany at 9.45 A. M.  
Leave Albany at 10.15 A. M.  
Arrive at New York at 3.30 P. M.

##### CHICAGO TRAINS.—

Leave Chicago at 7 A. M., 3 P. M.  
Arrive at Cleveland at 9.30 P. M., 7.20 A. M.  
Leave Cleveland at 10 P. M., 8 A. M.  
Arrive at Buffalo at 5.30 A. M., 4.20 P. M.  
Leave Buffalo at 6 A. M., 5 P. M.  
Arrive at Albany at 4.45 P. M., 5.30 A. M.  
Leave Albany at 5.15 P. M., 6.15 A. M.  
Arrive at New York at 10.15 P. M., 11.15 A. M.

##### WESTWARD.

Leave New York at 6.30 A. M., 4.30 P. M., 11 A. M.  
Arrive at Albany at 11.30 A. M., 10.30 P. M., 5.30 P. M.  
Leave Albany at 12 M., 11 P. M., 6 P. M.  
Arrive at Buffalo at 11.30 P. M., 10.40 A. M., 6.30 A. M.  
Leave Buffalo at 11.40 P. M., 10.40 A. M., 7 A. M.  
Arrive at Cleveland at 7.30 A. M., 5.20 P. M., 2.30 P. M.  
Leave Cleveland at 8 A. M., 6 P. M., 3 P. M.  
Arrive at Toledo at 12.15 P. M., 10.30 P. M.  
Leave Toledo at 12.40 P. M., 10.50 P. M.  
Arrive at Chicago at 10.20 P. M., 8 A. M.  
Arrive at Cincinnati at 1.50 A. M.

To take effect Monday, November 17, 1856,

Mr. Newman moved that the report of the committee on Mr. Brough's resolution be taken from the table. Carried.

The motion as reported was as follows:

*Resolved*, That while we recognize the right of every employee of a railroad company to voluntarily retire from its service, upon proper and reasonable notice, and to demand and receive a letter of dismissal according to his merits, we discountenance and condemn the principle of such employees associating themselves together, to resist the rules and regulations of the service, or embarrass the operations of the road.

The resolution as read was passed.

On motion of Mr. Hubby, it was unanimously *Resolved*, That on and after January 1, 1857, all coupon tickets shall have printed upon their faces:—"Good only for 14 days from date when for 1000 miles or under, and 20 days when over 1000 miles. From [here insert the place of sale]. To [here insert final destination]. This coupon will not be received for passage, unless the remaining coupons are attached."

On motion of Mr. Corning,

*Resolved*, That the subject of doing away with the present coupon ticket system, and adopting in its stead, a card ticket system, if practicable, be referred to the general ticket agents to be

decided on at their meeting in St. Louis, 19th November.

On motion the convention adjourned to meet at 7 P. M.

#### R. R. IRON AND ITS MANUFACTURE.

We give in another column an interesting communication on this subject, from a gentleman who has, perhaps, contributed more by his labors than any other person, to the development of the iron resources of Ohio. Prof. Mather reasons, and with force, that railroad companies should own their own furnaces, and manufacture their own rail bars and other iron. That such a plan is both practicable and feasible, is evident from the following considerations:

1st. A road of one hundred miles in length, when called to renew its rails, would save enough on that item alone to build its furnace.

2d. They would make a large item of saving every year, which would act as profit on the investment.

3d. The necessary capital has to be furnished, and is paid now as profit to foreign manufactures.

These considerations would seem to be conclusive on this question. Were the system here recommended carried out in all its details, it would work a complete revolution in our railroad system. Railroads would save nearly *one-half* in the first cost of their iron, and would consequently go less into debt. Their stocks would be more valuable; our own manufactures would be developed. And lastly, vast sums of money, now paid as tribute to foreign countries, would be kept at home.

#### TENNESSEE & ALABAMA R. R.

This is one of the great chain of railroads that is to form the grand trunk line from Cincinnati to the Southwest. It commences at Nashville and runs southwestwardly to the intersection of the Mobile & Ohio and the New Orleans, Jackson & Great Northern Railroads. It is easy to see, therefore, the important bearing of this link on the future of our internal commerce. When the Lexington & Danville, the Nashville & Cincinnati, the Tennessee & Alabama, and the New Orleans, Jackson & Great Northern Roads are all finished on their shortest lines, we shall have almost an *air* line, uniting New Orleans, the queen of the South, with Cincinnati, the metropolis of the center.

The Fourth Annual Report of the President, Engineer, and Treasurer of this company is before us. From this we learn that the prospects of the company for the prosecution of the work with vigor and activity are fair. The present condition and prospects of the road may be judged from the following extracts from the reports. The President says:

"The Engineer has been instructed by a resolution of the Board to have in readiness and place immediately under contract all those



“At Nashville work was commenced on the extension to Broad street about the first of December, and should have been finished before this date; but, owing to the unusual severity of the winter, and the scarcity of laborers, the contractors have not been able to complete it in time, and the cars cannot commence running before early in August. Much annoyance and great expense have attended the right of way in town, and the history of this company clearly proves the policy, hereafter, of entirely securing the necessary quantity of land, by release or otherwise, before the work is commenced.

"It is not advisable, with the road at its present terminus, to have more trains than are now employed, because the increase of business would not pay the additional expense;



but with forty to fifty miles in operation enough would be gained to justify it."

The Treasurer's report shows the financial condition of the company to be as follows:

|                                |              |
|--------------------------------|--------------|
| CAPITAL STOCK, July 1st, 1856— |              |
| Original subscriptions.....    | \$692,800 00 |
| New do .....                   | 8,400 00     |
| Contract do .....              | 3,081 66     |
| Printing do .....              | 2,500 00     |
| Maury work do .....            | 80,000 00    |
| Broad street do .....          | 28,075 00    |
| Davidson county Bonds.....     | 200,300 00   |

No. of shares, 20,297. Amount in dollars, \$1,014,856 66

|                                  |              |
|----------------------------------|--------------|
| RECEIPTS to July 1st, 1856—      |              |
| From stockholders.....           | \$124,077 67 |
| Bills and notes.....             | 233,566 99   |
| Franklin bond interest.....      | 3,099 88     |
| Transportation.....              | 41,392 88    |
| Franklin subscription.....       | 1,324 49     |
| Sundries.....                    | 255 75       |
| President iron account.....      | 7,630 17     |
| Cotton bills.....                | 9,034 60     |
| Davidson bonds and interest..... | 48,658 25    |
| New subscribers.....             | 1,819 51     |
| Broad street subscribers.....    | 19,733 09    |
| Real Estate.....                 | 165 00       |

\$540,807 38

|                                    |              |
|------------------------------------|--------------|
| DISBURSEMENTS—                     |              |
| Paid to construction.....          | \$196,241 57 |
| Engineering.....                   | 19,821 61    |
| Bills and notes.....               | 203,063 32   |
| Land damages.....                  | 12,448 22    |
| Station grounds.....               | 15,753 64    |
| Duties on iron.....                | 12,878 60    |
| Expense.....                       | 2,719 42     |
| State bond interest.....           | 22,972 50    |
| Davidson bonds.....                | 549 48       |
| Real estate.....                   | 4,420 70     |
| Salaries and agencies.....         | 8,837 80     |
| President's iron account.....      | 8,840 84     |
| Transportation.....                | 17,196 30    |
| Track and equipment.....           | 12,212 34    |
| Freights on iron, &c.....          | 325 30       |
| Station buildings.....             | 537 96       |
| Stock damages.....                 | 12 00        |
| Loss, counterfeit, &c.....         | 1 00         |
| Balance on hand July 1st, 1856.... | 2,246 63     |

\$540,807 38

|                                    |              |
|------------------------------------|--------------|
| STOCK PAID BY WORK OF SUBSCRIBERS— |              |
| To construction.....               | \$104,231 63 |
| Agencies and salaries.....         | 8,665 00     |
| Expenses of President.....         | 200 00       |
| Real estate.....                   | 971 56       |
| Engineering.....                   | 195 87       |

The following gentlemen are the Officers and Directors for the ensuing year:

OFFICERS.—John S. Claybrooke, President; Frank Hardeman, Treasurer; Robt. H. Bradley, Secretary; John Childe, Chief Engineer; A. Anderson, Resident Engineer and Superintendent.

DIRECTORS.—John S. Claybrooke, Thomas F. Perkins, William O'N. Perkins, M. G. L. Claibourne, Samuel H. Armstrong, Samuel Henderson, B. M. Hughes, John Marshall, Philip W. Baugh, C. H. Kinnard, E. Thompson, John McGavock, C. W. Nance, H. G. W. Mayberry, William P. Cannon.

THE GREAT SOUTHERN PACIFIC RAILROAD.—We regard this the greatest of the enterprises of modern times—or of any times, ancient or modern, having utility for a basis. The Pyramids of Egypt, the Palaces of Balbec, the Wall of China, were doubtless great achievements, but for no practical advantage to the world, though gratifying to the vanity and ambition of their mighty builders. They remain as monuments of the profligacy or tyranny of generations that have past away and are forgotten. The age in which we live is essentially one of utility, and may, with great propriety, be styled a business, money getting age, or the age of dollars, and, to sum up all in a word, the railroad age. Decidedly the most important of all the contemplated, those in progress, or proposed to be undertaken, is the great Southern Pacific, that will cross the Rio

Grande at El Paso, thence to the head of the Gulf of California, and having its terminus on the Pacific coast, either at San Diego, Monterey or San Francisco. We have not had the leisure to examine fully the surveys, documents and estimates furnished by Mr. Conkling, the intelligent agent of the Company in this city; but having travelled the over-land route to California in 1849, by Fort Laramie, Fremont's Pass of the Rocky Mountains, and the Sierra Nevada range north of great Salt Lake, we can have no sort of hesitation in giving the Southern route through Texas the preference. When we have had time to examine this question we will state the reasons for our preference. Viewed in the light of "dollars and cents," merely, the offers of the Company appear to us to present irresistible claims to consideration.—*Cincinnati Daily Sun*.

CATAWISSA R. R., PA.—The presidency of this company has been resigned by D. Lewis, Esq., and Thomas Kimber, jr., has been appointed to succeed him in this important position. It is said he accepts the office under favorable auspices.

#### GREAT IMPROVEMENT IN THE MANUFACTURE AND ECONOMY OF IRON.

This age has been most distinguished for wonderful improvements in the physical arts; but, notwithstanding this, we certainly should not have suspected that the manufacture of one of the most common and staple articles in use among mankind should be so simplified and economized that its expense would be reduced one-half at a single dash! Yet we are told, on the most reliable authority, that this is the fact; and we look forward with no little curiosity to see the development of this extraordinary discovery on the industrial pursuits of the country; for there is no one it will not affect.

The London *Times* has recently had several articles on the subject of the new improvements in the manufacture of iron. The truth of the statements made is confirmed by the arrival of several gentlemen, of the highest intelligence, from England, who affirm that the discovery to which we allude is really as great and as valuable as represented. This discovery is that of a new process in the manufacture of bar iron, and indeed of all fine iron, by which the cost is reduced at least one-half! We need not here detail the process; suffice it to say, that the iron is never cooled, from the melting of the ore till it becomes bar iron. The discovery was made in England, and has already been practically carried out. The most skillful and prudent people have no doubt of the full success of the new process. On the supposition that the price of iron is reduced one-half, it becomes interesting to know what will be the effect on various interests. One of the most important is, of course, the railroad interest. In former numbers of the *Record* we showed that there were annually constructed in the United States about 3,000 miles of railroad, and that the iron consumed in renewing rails, locomotives, machinery, &c., was about equal

to that required for construction. The iron required for a mile of railroad is generally considered about 100 tons. We have, then, this result:

|   |               |
|---|---------------|
| 3,000 miles of railroad.....            | 300,000 tons. |
| Renewals, repairs, and locomotives..... | 300,000 "     |

|   |              |
|---|--------------|
| Required annually.....  | 600,000 "    |
| At \$65 per ton, is.....  | \$39,000,000 |
| Saving at one-half.....   | \$19,500,000 |
| The amount of iron used in other species of manufactures is about equal to this, saved. | 19,500,000   |

Aggregate saved.....\$39,000,000

If we are right in our premises, as we believe, it must happen that nearly *forty millions per annum* will be saved, in this country, by the new process; but this is not all. The diminution of price in any useful article always increases the consumption. The uses of iron are so numerous that the reduction of price one-half must cause a prodigious revolution in the consumption. By the vast increase of railroads, steamboats, mills, &c., incident to a new country, and the progress of society, the production and consumption of iron in this country has increased with immense rapidity; nor does there seem any end to the demand for it. Every day gives rise to a new use. Thus we have iron fences, iron grates, iron furniture, iron utensils; in fine, the new uses of iron run through all the departments of life. As society grows older this must be more and more the case. The wood disappears from the surface of the earth, while its bowels are filled with the metals. Therefore, there could not come to society more valuable improvements than those which facilitate and cheapen the manufacture of iron. We can readily imagine a time when bedsteads, tables, chairs, wagons, fences, gates, may all be made of iron. It would be so if iron were near as cheap as wood; for its indestructible nature gives it a value which belongs to no other material. The iron manufacture has already been greatly cheapened by the new methods of producing pig iron; but if this reduction of cost be carried into all kinds of iron, the result will be immeasurably increased.

On the supposition that railroads only are to receive benefit from the new discovery, that benefit alone will be immense. A saving of *twenty millions* a year will be equal to the construction of 1000 miles a year, or to the interest of *three hundred millions* in capital! Thus the railroad interest would be aided in such a way as to aid its extension on one hand, and to make the employment of capital in railroads vastly more profitable. In any point of view, the new method of manufacturing iron is likely to work no small revolution in many arts and manufactures; increasing the consumption of that article, extending its uses, and rendering a large amount of capital more valuable.

We may add, in conclusion, that our information is from the best authority; and while we are surprised, we doubt nothing in regard to the progress of the arts in this age of invention.



MANITOWOC AND MISSISSIPPI R. R.—We find the following notice of this road in the *St. Paul Advertiser*. Wisconsin is pushing its railroad system very rapidly and reaping the advantage of its efforts by the equally rapid development of its agricultural and mineral resources. But it is a serious question for the future, whether its parallel lines will not form competing interests dangerous to the well being of its whole system, till the State is settled more thickly than many of the older States even now are. Of this road the *Advertiser* says:

This is to be a part of the system of railroads connecting Lake Michigan, at no distant day, with the Upper Mississippi. By the politeness of one of its projectors, we are enabled to present a statement of its condition and prospects:

"You will find our railroad charter in the laws of 1851, and amendments in same laws of 1853 and 1854. The last authorizes the route from here (Manitowoc) to St. Paul or to the State line between Wisconsin and Minnesota. The original charter was to La-Crosse. It is the design of the Company to run to Menasha and Stevens' Point, and thence to St. Paul.

The contract for the first division of the road from Manitowoc to Menasha, is let, and by it this part of the road is to be completed a year from next November. We expect to have the first eight miles from Manitowoc finished and the cars running by the first November this year. The Company is poor, and our people are not yet able to contribute as they would like to; but we hope before long to show such a state of facts, or rather to impress capitalists with the facts of the importance of our route, and the large business to be done on the road, when completed to Menasha, and the increased advantage to accrue by its extension west, that they shall be induced to engage in the enterprise and put it through.

We are doing and shall continue to do all that energetic perseverance can accomplish, to push the road to completion to Menasha by a year from November next; and then, if we can't show a state of things to warrant capitalists in coming to our aid, in its extension, we shall be greatly disappointed."

Manitowoc is growing rapidly, and bids fair to be no mean rival of Milwaukee at no distant day. Its natural advantage, and its beautiful climate, and its heanty of natural location and scenery, are not equaled by any town on Lake Michigan. No one who has been there can dispute this statement. It numbers now about 3,000 inhabitants.

#### A NEW CAR BRAKE.

We saw, a day or two ago, a new and improved car brake, which we understand is to be tested practically as soon as cars can be fitted with it. The main features of the brake are as follows: Two semi-circular arms are keyed on a shaft, which passes across the truck, directly over the wheels, above their centers. These arms reach in front of the wheel, so that when they are lowered, the extreme point is pressed on the rail by the wheel itself. This raises the wheel from the rail, and stops its motion. The friction and consequent wear is, therefore, on the brake, and not on the wheel.

The coupling to this brake is such that a whole train can be operated by a single person.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

## PUBLISHERS' CIRCULAR.

### RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, )  
T. WRIGHTSON, ) .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati,

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

#### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use

#### TERMS:

Subscriptions to the RECORD, \$3 per annum, in advance.

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| " " per month.....                | 3 00   |
| " " per annum.....                | 20 00  |
| One column, single insertion..... | 4 00   |
| " " per month.....                | 10 00  |
| " " per annum.....                | 60 00  |
| One page, single insertion.....   | 10 00  |
| " " per month.....                | 25 00  |
| " " per annum.....                | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.  
All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

#### TEN STEAM PRESSES.

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and ADAMS, and our selections of Type are sufficient to suit every taste.

BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, TUESDAY, OCTOBER 14, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD..... EDITOR

W. WRIGHTSON, ASSOCIATE EDITOR.

CINCINNATI, -- -- TUESDAY, OCT. 14, 1856.

#### OBJECTIONS TO THE SOUTHERN PACIFIC R. R., ANSWERED.

The New York *Tribune* quotes from the *Revue des Deux Mondes* an article on the Pacific R. R., which objects to the Texas route, mainly because it is insufficient (says the Reviewer) to sustain a population adequate to give business to the road. He says the Pacific road must draw to itself an immigration to settle the country, or it cannot be supported, and this is certainly true.

"Such an emigration, however, can only take place by finding certain elements of prosperity in the new regions to which it is sought to attract it; and hence it follows that considerations relating to the nature of the country to be traversed, climate, fertility, and abundance of wood and water, must override, in the choice of the route for a road destined to unite the two oceans, considerations of a purely technical kind, and which relate only to the construction and working of the road."

We admit the general correctness of these remarks; and claim, that the Texas route is quite equal to, if not greater, than either of the others, in these very particulars.

1. OF CLIMATE, it is not denied, the Texas route is the best. Indeed, this matter is too clear to dispute, and before we proceed to the other points, we may here remark, that this one feature of climate should be decisive of a Pacific road. On the Texas route the road may be run the entire year without any obstruction or increased expense,—while in all the northern routes it will probably be obstructed five months in the year, and at any rate the expense of running in those five months will be very much greater. In former articles, we have clearly proved that the difference in the running expenses of the Texas route, as caused by climate alone, as compared with Northern routes was sufficiently great to pay interest on a large part of the cost.

2. RESOURCES OF THE COUNTRY. The Reviewer says:

"The first part of the route at the eastern end, as surveyed by Captain Pope, traverses for three or four hundred miles the plains of Texas, almost everywhere covered with forests. From this, the only inhabitable portion of the whole route, the road ascends to the famous Llano Estacado, or Staked Plains, occupying the northwestern part of Texas and the eastern part of New Mexico. These elevated plains, occupying 120 miles of the

route, are perfectly level, and so hard that no road bed would be required; but they are also a perfect desert, without wood, grass, or water."

Now here the great error, *in fact*. The Reviewer has taken only the first hasty surveys, made by the government, without referring to the much later and better information furnished by COL. GRAY and others who have corroborated him.

The "Staked plains" are level and hard, but are neither without water or fuel. The experiment has been tried repeatedly, and water is found in abundance, at short distances. Indeed, the geological structure of that whole plain is such, that the water is deposited necessarily, at short depths, under the surface. If wood is wanted for locomotive purposes, the Metique tree, though small, is sufficient for the purpose. But, independent of that, there is coal in the line of the road, which is sufficient for all purposes, and for which the road furnishes means of transportation. It is evident the French writer is not in possession of the latest information.

After passing the "Staked Plains," the writer thus proceeds:

"The line then follows, for more than 200 miles, the valley of the Gila to its junction with the Colorado. This valley is described by Lieutenant Parke, who surveyed that part of the route, as a long plain, gently descending, bounded by mountain ridges and hills of small elevation, and presenting great facilities for the construction of a railroad. Beyond the Colorado in order to reach San Diego it is necessary to traverse a new desert, and to penetrate the coast chain of California by the pass of San Gorgione."

It will be observed that this part of the route is of easy construction. The valley is small, but fertile.

From the Colorado to San Diego is represented as a desert; but that is not true. From the Colorado the route is not where the French writer represents it. The present and true route is through the "Gadsden Purchase." Part of it is fertile, and all of it is a country inviting immigrants to the full extent of California. What carried such an immense immigration into California? The mines. But mines of copper and silver of the richest kind abound in the "Gadsden Purchase."

Let us now review the true elements of this route, in connection with the objections here urged.

1. It is assumed that the road must go to San Francisco, and the port of San Diego is underrated. Now, for the government it may be true that this road must go San Francisco;

but not so if constructed by a commercial company. A company constructing this work only seeks commerce—business for the road. It cares not about bringing business to a city; but is only concerned with it as means of profit to the road. Now a railroad to the Pacific is *unlike any other work in this particular*. A railroad to the Pacific does not take business from a city; but makes business for itself. The Panama Railroad gets an immense business; but of what consequence is any town there? It is the Pacific trade, and not the trade of any town which is wanted. For this purpose the harbor of San Diego is just as valuable as that of San Francisco. The harbor of San Diego is one of the very best on the Pacific, being four miles in length, and completely sheltered.

2. The cost of the road. The article in the *Revue de Deux Mondes* admits that this route is far the cheapest. This is a great deal; for does not every one see at once that if the road on this route can be made for \$60,000,000, and that on the other only for \$150,000,000, the chance of making any profit is double as great on the Texas route? There may be business enough to make a profit on sixty millions when there would not be on one hundred and fifty.

3. It is not true that the Texas route is less inviting to immigrants than either of the others. Here is the comparison of the Southern and Middle routes, by the Government Engineers, who made it on a very unfavorable location.

|   | Texas Route.     | Middle Route |
|---|------------------|--------------|
| Arable Land.....                          | 408 miles.       | 620          |
| Arable Areas in uncultivated regions..... | 2,300 sq. miles. | 1,120        |
| Whole distance.....                       | 1,618            | 2,032        |
| Region comparatively barren.....          | 1,210            | 1,412        |

Here, on the very figures taken by the *Revue de Deux Mondes*, it is evident the Texas route is the most favorable for settlements of the two.

But, let us refer one moment to circumstances not taken into view by the French writer:

1. The climate, of which we have spoken; far more inviting to immigrants.

2. The mines, in the Gadsden Purchase, and on the Gila and the Colorado. These will induce a rapid and large settlement.

3. The shortness of the distance; making San Diego by far the best route.

4. The discovery of fuel and water on the route, amply sufficient.

It is, therefore, quite obvious that, notwithstanding the objections we have noticed, the Texas route must still have the preference. Taking this, in connection with the valuable



grants of Texas, it is obvious that a great commercial speculation is offered, in the construction of the Texas Road.

#### TEXAS WESTERN R. R.

The annual meeting of the stockholders of this company was held at the office of the company in New York on Monday, October 6th. There was a moderately full representation of the stockholders. It is understood that about twenty-two millions of the five per cent. stock in all, has been issued. Nearly nineteen millions was represented either personally or by proxy; the larger portion by proxy, although at the election, votes were cast on only sixteen millions.

The meeting was organized by the election of Hon. Robert J. Walker as Chairman, and George F. Allen, Esq., of New York as Secretary.

The object of the meeting was briefly stated by the chairman; and the present condition of the company as regards its legislative enactments, and the policy of Texas as expressed in its recent legislation, was given by the Hon. T. Butler King.

The remarks of Mr. King were listened to with marked attention, and gave a clear and lucid idea of the rights of the company under the various land grants, its charter, and the loan bill. These rights are of the most unequivocal character, and are all secured on the completion of a small section of the road. On this the company have already made fair progress, and it is understood that there will be no difficulty in finishing the portion necessary to satisfy the requirements of the charter. When that is done, this company has the most liberal charter, and the *largest* land grants that was ever given to a railroad company.

The meeting then proceeded to the election of directors for the ensuing year, and the following gentlemen were chosen:

HORATIO ALLEN, New York.  
F. M. DIMOND, Rhode Island.  
T. BUTLER KING, Georgia.  
R. M. STRATTON, New York.  
GEORGE D. POST, "  
R. J. WALKER, "  
EDWIN POST, "  
MICHAEL G. BRIGHT, Indiana.  
SAMUEL F. BUTTERWORTH, New York.  
R. T. ARCHER, Mississippi.  
GEN. WM. COOK, New Jersey.  
HENRY MCFARLANE, "  
C. S. DICKERSON, "  
WILLIAM T. SCOTT, Texas.  
M. J. HALL, "  
J. P. HEDGECOCK, "  
W. R. D. WARD, "  
DR. J. TAYLOR, "  
C. S. TODD, "

After the result was announced, the meeting of the stockholders adjourned.

The first business meeting of the board was appointed for the next day, and Horatio Allen of New York was elected President, S. Jaudon, Secretary, and J. T. Smith, Treasurer.

Mr. Allen, the President of the Board is one of the firm of Stillman, Allen & Co., of the Novelty Works of New York, and is said to be an engineer of great ability and experience. His election is regarded as a favorable one by the friends of the road.

We learn that further sales of stock have been ordered discontinued, and that means have been provided for the vigorous prosecution of the work. Under this state of things we congratulate the stockholders on the selection they have made, and the prospects of the company. They have a liberal charter, munificent grants of the best land in the world, and a loan from the state, of six thousand dollars per mile for every mile of road built. This loan is a free offering from the state, without commissions or discounts, and is a guarantee to capital that may hereafter seek investment in this direction.

Those stockholders, therefore, who have been delaying the payment of the trifling installments now due, would do well to pay up promptly and *in full* of all installments due or to be due, and thus save for themselves the investment already made in this great highway of nations.

A word more and we have done. The first *eight hundred* miles of the great Pacific road, we regard as secure. About three hundred more in California is already in charge of an organized company in that state. Will our national government now do *any thing* or *nothing* for the little link of 500 miles through the Gadsden purchase? This is a question replete with interest. And its present position is an anomaly in the history of nations, and a libel upon the intelligence and patriotism of our people.

#### THE METROPOLIS OF THE WEST, AND THE NEEDS OF ITS RAILROADS.

We are approaching another Presidential election, and that constitutes an American era in time. It is well to look for a moment at the progress of things, since the last election, in 1852. Our point of view is Cincinnati, unquestionably the Metropolis of the West. In its central position, its immense commerce, its great manufacturing industry, and its still rapid growth, it is yet unrivaled. In 1850 (June 1) the population of Cincinnati was 115,000. In 1852 it was probably 135,000. At this time, within the city limits, it is about 175,000; and within sight of Fifth street market, including the suburbs, it is 200,000. In the four years since 1852 its commerce has more than doubled, and its wealth increased 50 per cent.

Such is the progress of the Metropolis of the West; and now let us turn to the progress of its railroads, and their present needs. Since 1852 the following railroads, practically terminating at the city, have either been constructed or completed, viz:

|   |           |
|---|-----------|
| 1. Cincinnati, Hamilton & Dayton Railroad.. | 60 miles. |
| 2. Hillsborough railroad.....               | 37 "      |
| 3. Cincinnati & Marietta R. R.....          | 160 "     |
| 4. Cincinnati, Wilmington & Zanesville R. R | 131 "     |
| 5. Ohio & Mississippi R. R.....             | 80 "      |
| 6. Covington & Lexington R. R.....          | 95 "      |
| 7. Cincinnati & Indianapolis R. R.....      | 90 "      |

Now, that these roads have been of immense benefit to the city, there can be no doubt; but much, very much, remains to be accomplished, and it is of this we would speak.

1. The *Ohio & Mississippi Railroad* needs to be *finished*; and on this head we are happy to believe it will soon be accomplished. From conversation with some of the gentlemen in charge of it, we learn that all will be completed on the 1st of January, except the great tunnel. This is not contracted to be complete till the 1st of April next; but we learn that arrangements are making to shorten the time.

2. The *Covington & Lexington* (or rather the Kentucky Central) should be completed to Danville, as originally intended. This, too, we think will soon be done.

3. The *Marietta Railroad* is, we are told, about to be completed by January to Marietta. This will make a connection between Baltimore and Cincinnati by steam, and one of vast benefit to both. This, when made, will be one of the great thoroughfares through the West.

4. But, one of the great needs to both the city and the railroads is, that the *Wilmington*, the *Marietta*, and the *Little Miami* Roads should have a *new entrance* to the city, and this should be on the upper plain. To accomplish this it is necessary to come through the TUNNEL, on the Short Line Road. To do this demands again that the tunnel should be finished, and we must say that this is one of the most important enterprises which should engage the attention of either the city or the railroad companies. The entrance and depot of the Little Miami Company is now altogether too much confined and crowded for the comfort of passengers, or the advantage of freight. It would be a relief to the commerce of the city, and a gain to it, to have an entrance on the upper plain. This might be used by all roads east and north, giving to each a new entrance, bringing passengers nearer the hotels, and greatly facilitating general business. To the *Wilmington* and the *Marietta* Companies it seems a necessity; for how else are they to have *any independent business*. They must terminate somewhere on their own hook; but, as now arranged, they terminate nowhere.

5. Another great need of the railroad companies is some mode of *transferring and continuing freight, by rail*, in and through the city. We have alluded to this subject before, and it loses no importance by the passage of time.

To do this is perfectly practicable, provided the tunnel be completed, as we remarked before. The tunnel should first be completed, and then another tunnel be made through



Sixth street, or Fifth. This could be easily made on a grade to which all other roads could be accommodated. The Little Miami and the Ohio & Mississippi could both be graded up to a common depot, under Sixth street. The effect of this on the facilities of business would be very great. It would save much cost now lost in the transshipment of goods, and it would make this city what it ought to be—the center of all the traffic in the Mississippi valley.

## Railroads.

### ARTICLES OF CONSOLIDATION OF THE OHIO & PENNSYLVANIA, OHIO & INDIANA, AND FT. WAYNE & CHICAGO R. R. COS.

One of the most important events that has occurred in the railroading of the country for the past year, is the consolidation of the above companies in the company now known as the Pittsburg, Ft. Wayne & Chicago R. R. Co. We have before adverted to the fact, and we are now enabled to give the Articles of Consolidation, as adopted. The leading reasons that were urged in favor of the consolidation were:

1. "The early and thorough completion of the Ohio & Indiana and Fort Wayne & Chicago Roads, and a consequently greatly increased business over these roads and the Ohio & Pennsylvania Road.

2. An immediate and permanently favorable effect upon the value of the stocks of the respective roads. The market value of the stock of the Ohio & Pennsylvania Road, it is believed, will advance from fifteen to twenty per cent. on the consolidation being perfected, and a corresponding advantage would result to the stockholders of the two other companies.

3. A largely increased credit to the consolidated company, beyond that now possessed by either of the three companies as distinct corporations, insuring a high character and high price for all its securities required for the completion of the line, and consequent saving of expense of construction.

4. An entire unity of interest in the operation of the three roads, and more thorough system, economy, and efficiency in management in every department.

5. The ability of the consolidated company, by the length of its line, and the importance and strength of its position in the railroad system of the country, to exercise a large influence in the working of that system, by the extension of adequate accommodations to constructed and intersecting roads, and by removing inducements to the construction of competing and unnecessary, and consequently unprofitable roads.

The fundamental maxim of our political institutions, 'in union there is strength,' may be well applied to the present question. One of the worst features in the history of our American railroads, has been the disposition to construct competing and unnecessary roads. The whole railroad interest of the country has suffered from this cause. Its effectual prevention can best be secured by the combination of leading lines of road, able and willing to extend over their own lines all the facilities

ties which the public interests and convenience really demand. A line of railroad like the Pittsburg, Fort Wayne & Chicago Road, extending four hundred and sixty-five miles, through the territories of four States of the Union, will become, in fact, a great national highway, over which the travel and commerce of this country should find every facility of passage, untrammelled by the narrow and illiberal views which too often seem to govern the management of roads of lesser importance, forced by their position to keep up a constant struggle for existence with rival lines."

The following are the lengths and statement of capital and debts of each of the companies:

| LENGTH OF EACH ROAD.                                  |            |
|---|------------|
| Ohio & Pennsylvania, from Pittsburg to Crestline..... | 167 miles. |
| Ohio & Indiana, from Crestline to Ft. Wayne.....      | 131 "      |
| Fort Wayne & Chicago, from Fort Wayne to Chicago..... | 147 "      |
| Total.....  | 465 "      |

| TOTAL PRESENT COST OF ROAD. |             |
|-----------------------------|-------------|
| Ohio & Pennsylvania.....    | \$6,186,688 |
| Ohio & Indiana.....         | 3,432,153   |
| Fort Wayne & Chicago.....   | 1,916,704   |

#### TOTAL ESTIMATED COST, COMPLETED AND EQUIPPED.

|                           |             |
|---------------------------|-------------|
| Ohio & Pennsylvania.....  | \$6,586,088 |
| Ohio & Indiana.....       | 3,906,750   |
| Fort Wayne & Chicago..... | 3,904,584   |

#### AMOUNT REQUIRED TO COMPLETE ROADS.

|                           |           |
|---------------------------|-----------|
| Ohio & Pennsylvania.....  | \$400,000 |
| Ohio & Indiana.....       | 688,664   |
| Fort Wayne & Chicago..... | 1,987,860 |

This estimate does not include probable discounts and commissions.

#### TOTAL COST PER MILE, COMPLETED AND EQUIPPED.

|   |          |
|---|----------|
| Ohio & Pennsylvania.....                | \$25,032 |
| Ohio & Indiana.....                     | 29,064   |
| Fort Wayne & Chicago.....               | 26,562   |
| Cost per mile of consolidated road..... | 50,220   |

#### CHARACTER OF CAPITAL AND DEBT OF EACH ROAD.

| Road.                | Stock.      | Stock per mile. | Per cent. of stock. |
|----------------------|-------------|-----------------|---------------------|
| Ohio & Penna.....    | \$2,631,030 | \$14,101        | 40                  |
| Ohio & Indiana.....  | 1,504,377   | 11,471          | 38                  |
| Ft. Wayne & Chi..... | 1,767,484   | 12,160          | 46                  |

| Road. | Bonds. | Total of bonds. | Other debts. |
|-------|--------|-----------------|--------------|
|-------|--------|-----------------|--------------|

|                |  |             |           |
|----------------|--|-------------|-----------|
| O. & P.....    | \$1,750,000 mortgage.<br>1,391,000 income.<br>100,000 "      | \$4,091,000 | \$398,126 |
| O. & I.....    | 250,000 Bridge.<br>1,000,000 1st mort.<br>480,000 2d mort.   |             |           |
| F. W. & C..... | 292,000 3d mort.<br>650,000 1st mort.<br>500,000 R. E. mort. |             |           |

|             |           |         |
|-------------|-----------|---------|
| O. & I..... | 1,702,000 | 341,050 |
|-------------|-----------|---------|

|                |           |         |
|----------------|-----------|---------|
| F. W. & C..... | 1,186,000 | 312,060 |
|----------------|-----------|---------|

#### TOTAL CAPITAL STOCK, FUNDED AND OTHER DEBTS AND LIABILITIES.

|                           |             |
|---------------------------|-------------|
| Ohio & Pennsylvania.....  | \$6,186,688 |
| Ohio & Indiana.....       | 3,333,777   |
| Fort Wayne & Chicago..... | 3,285,944   |

The relative values, or basis of the respective roads in the consolidation—

|                           |     |
|---------------------------|-----|
| Ohio & Pennsylvania.....  | 100 |
| Ohio & Indiana.....       | 100 |
| Fort Wayne & Chicago..... | 106 |

The following are the Articles of Consolidation:

Articles of Consolidation, made and entered into this 6th day of May, in the year of our Lord one thousand eight hundred and fifty-six, between the Ohio & Pennsylvania Railroad Company, a corporation existing under the laws of the States of Pennsylvania and Ohio; the Ohio & Indiana Railroad Company, a corporation existing under the laws of the States of Ohio and Indiana; and the Fort Wayne & Chicago Railroad Company, a corporation existing under the laws of the States of Indiana and Illinois.

WHEREAS, The railroads respectively owned by the said companies above named constitute a continuous line of railway of uniform gauge from the city of Pittsburg, in the State of Pennsylvania, to the city of Chicago, in the State of Illinois; and the Directors of the said several companies, upon mature consideration, have determined that the interests of the respective stockholders of said companies, and the public interests and convenience, will be greatly promoted by the union of their said several roads into one road, and by the consolidation of the respective stock of said companies into one common consolidated stock.

And WHEREAS, The said several companies are authorized by Acts of the Legislatures of the said several States to elect such union of their respective roads, and to form, by consolidation of their corporate rights and franchises, one joint stock company, and have agreed so to do upon the terms and conditions hereinafter mentioned and contained.

Now, therefore, this agreement, made by and between the several corporations above named, parties hereto, under and by virtue of the authority conferred upon them by the laws of the said several States:

Witnesseth, that the said Ohio & Pennsylvania Railroad Company, the Ohio & Indiana Railroad Company, and the Fort Wayne & Chicago Railroad Company, do agree, and each for itself doth severally agree, that the said several companies shall be consolidated into and form one corporation, under the name and style of the "Pittsburg, Fort Wayne & Chicago Railroad Company."

And in pursuance of the said Acts of the Legislatures of the said several States, the said parties hereto do hereby prescribe the following terms and conditions of the said consolidation, and do respectively agree thereto, and to the mode of carrying the same into effect, as herein provided for:

ARTICLE 1. The Directors of the said Pittsburg, Fort Wayne & Chicago Railroad Company shall be fifteen in number, one of whom shall reside in the city of New York, four in the State of Pennsylvania, four in the State of Ohio, four in the State of Indiana, and two in the city of Chicago, in the State of Illinois.

ART. 2. The first election for the Directors of said Pittsburg, Fort Wayne & Chicago Railroad Company shall be held at the rooms of the Board of Trade in the city of Pittsburg, in the State of Pennsylvania, on the 30th day of July next, between the hours of 9 o'clock A. M. and 5 o'clock P. M.

The following persons, to wit—George E. Arnold, Henry Houghland, and Richard Metheny, all stockholders in some one or more of the said companies, are hereby appointed inspectors or judges of said election, to perform the usual duties required by law in such cases. The inspector or inspectors attending at the time and place fixed for the election, shall have power to fill any vacancy occasioned by the non-attendance of any one or more of their number.

Any person so appointed, to fill a vacancy, must be stockholder in some one of the companies parties hereto. Should neither of the inspectors attend at the time and place appointed for the election, the stockholders present at the time fixed for opening the polls, shall have power by the vote of a majority in number of those present, to choose three persons, being stockholders in one or more of the said companies, whom, or any two of whom, shall have power to act as the judges of the said election. All stockholders in the several companies entitled to vote at any election of directors in the several companies parties to this agreement, shall have the right to vote at the said election, in person or by proxy, and shall be severally entitled to one vote for each share of stock (being fifty dollars at par) held by such stockholders in either of said companies. The fifteen persons, being stockholders in some one or more of the said companies, parties hereto, receiving the highest number of votes at the said election, shall be the first Directors of the Pittsburg, Fort Wayne & Chicago Railroad Company, and shall hold their office for one year, and until their successors are chosen according to law.

ART. 3. Said Directors shall, at the first meeting after their election, elect a President and Vice President from their own number, and shall also then, or as soon as conveniently may be hereafter, elect or appoint a Secretary and Treasurer of said company, and such other Officers, Engineers, Superintendents, Clerks, Agents, Assistants, and other employees as they shall from time to time find necessary for the proper transaction of the business of said company.

ART. 4. After the consolidation herein provided for is perfected, and after said first election, stockholders in said consolidated company only by surrender and exchange of their certificates in their several companies or otherwise, shall be entitled to vote at any meeting of the stockholders of said consolidated company.

ART. 5. The capital stock of said Pittsburg, Fort Wayne & Chicago Railroad Company shall be sixteen millions of dollars, to be divided into three hundred and twenty thousand shares of fifty dollars each, and the Directors of said new corporation may increase the capital stock thereof when necessary.

ART. 6. It being agreed that the estate, property, and franchises of the said several companies parties hereto, which, in pursuance of the laws of said States, will rest in said new corporation, are relatively of unequal value, the parties hereto, with a view to make compensation for such differences to the stockholders of the said companies respectively, do fix upon the following amounts to be allowed therefor, by the issue of certificates or scrip, as hereinafter mentioned, to wit:

1st. The stockholders of the said Ohio & Pennsylvania Railroad Company shall each be entitled to one hundred and twenty dollars of the stock of said Pittsburg, Fort Wayne & Chicago Railroad Company, for each one hundred dollars of stock held by them in the said Ohio & Pennsylvania Railroad Company.

2nd. The stockholders of said Fort Wayne & Chicago Railroad Company shall each be entitled to one hundred and six dollars of the stock of said Pittsburg, Fort Wayne & Chicago Railroad Company, for each one hundred dollars of stock held by them in said Fort Wayne & Chicago Railroad Company.

3d. The stockholders of the said Ohio & Indiana Railroad Company shall each be entitled to fifty dollars in the stock of said Pittsburg, Fort Wayne & Chicago Railroad Company, for each share of stock held by them in said Ohio & Indiana Railroad Company.

ART. 7. All stock and bonds of either of the companies parties hereto, owned or held by either of the others of said companies, and now or hereafter in their control, shall be surrendered and merged in said consolidated company, thereby lessening the capital stock and liabilities of said consolidated company to the amount of such surrendered and merged stock and bonds.



ART. 8. The holder or holders of any of the convertible bonds of the several companies parties hereto shall be entitled to receive, on surrender of such bonds, according to the tenor thereof, to the said consolidated company, stock in said consolidated company for the bonds so surrendered.

ART. 9. In all cases in which subscriptions or agreements with either of said companies parties hereto, for the stock of either of said companies, have been heretofore made by any person or persons, or bodies politic or corporate, and said subscriptions or contracts for stock yet remain unpaid or unperformed, either in whole or in part, the stock of said consolidated company may, upon payment of said subscriptions, or performance of said contracts, be issued to the said subscriber in the same manner as the said several companies parties hereto would have been bound to issue their stock respectively, had not this consolidation taken effect, and subject to the valuations hereinbefore specified.

ART. 10. Upon stock of either of said companies entitled to draw interest, the interest shall be included in the new stock of the consolidated company to be issued to the stockholders of the said several companies, such interest being computed up to the first day of July next. Each company entitled to a premium on its stock may, pending the completion of the consolidation, issue new conditional scrip certificates to their stockholders, for the premiums hereby agreed to be allowed. Where fractional shares shall be found due to stockholders for premiums hereby agreed to be allowed, or for interest, or otherwise, when converting their present stock into the stock of the consolidated company, scrip stock shall be issued for such fractions, entitling the holders to a full share of stock on payment of the difference in money, or on presentation of fifty dollars of such scrip stock.

ART. 11. The said new corporation shall, without delay, after its organization, issue to the stockholders of the respective companies parties hereto, and entitled thereto as aforesaid, and in proportion to their respective interest in the stock of said consolidated company, certificates of stock in said Pittsburg, Fort Wayne & Chicago Railroad Company, of such form as may be deemed advisable, and be prescribed by the Directors of said new company.

ART. 12. Upon the stock and scrip issued by said new corporation to the stockholders of said several companies parties hereto, in exchange for their stock in said several companies, the Directors of said consolidated company may allow interest at the rate of six per cent. per annum from the date of the taking effect of the consolidation until the road of said consolidated company shall be completed and in order for business to its terminus at Chicago; or until cash dividends shall be duly declared by the Directors of said new corporation, and the time of such completion to Chicago shall be declared by said Directors; but said interest shall be payable in stock, and no issue of stock shall be made therefor until after such completion of said road to Chicago, or until cash dividend shall be declared.

ART. 13. All and singular the rights, franchises, privileges, real estate, depot grounds, rights of way, road bed, railroad, iron rails, engines, cars, machinery, rolling stock, debts, dues, demands, cases in action, and property of every description, name, and nature, in which the said Ohio & Pennsylvania, Ohio & Indiana, and Fort Wayne & Chicago Railroad Companies have respectively any right, title, or interest, whether in possession, reversion, or remainder, with the appurtenances, upon the ratification of these articles, and the election of the first Board of Directors of the said Pittsburg, Fort Wayne & Chicago Railroad Company, as herein and by law provided for, and from thenceforth shall be held, owned, and controlled by the said Pittsburg, Fort Wayne & Chicago Railroad Company, their successors and assigns, as fully and completely, to all intents and purposes, as said several companies do or can now hold, own, use, or control the same; and no further conveyance or assurance shall be required for the full and complete vesting thereof in the said Pittsburg, Fort Wayne & Chicago Railroad Company.

ART. 14. All just debts, guarantees, and liabilities existing against said several companies parties hereto, at the time of the taking effect of this consolidation, shall be and are hereby assumed, and the same shall be provided for, paid, and discharged by the said Pittsburg, Fort Wayne & Chicago Railroad Company.

ART. 15. All the books, vouchers, records, muniments of title, and other documents pertaining to the business or property of the said several companies, parties hereto, shall be placed in the office of the Secretary of said consolidated company, and the said books, records, and papers shall be deemed and taken, so far as necessary, as the records and books of said consolidated company, and said books, records, vouchers, and papers shall be subject to the proper examination and inspection of all persons interested therein, who shall have the same access thereto as if the same had remained in the office of the original companies.

ART. 16. The said consolidated company shall, so soon as its resources will permit, and so soon as the same can be economically done, proceed with the construction of the entire road of the said Fort Wayne & Chicago Railroad Company, and complete the same into the city of Chicago.

ART. 17. It is agreed that these Articles of Consolidation shall be submitted to the stockholders of each of said companies parties hereto, at a meeting thereof called separately, for the purpose of taking the same into consideration; due notice of the time and place of such meeting, and the object thereof, shall be given. The time of such meeting of the stockholders of said Ohio & Pennsylvania Railroad Company shall be on the second day of July, A. D., 1856; the place the city of Pittsburg. The time of such meeting of the stockholders of said Ohio & Indiana Railroad Company shall be the twenty-fourth day of June next; the place the office of said company in the town of Bucyrus, Crawford county, Ohio. The time of such meeting of the stockholders of the said Fort Wayne & Chicago Railroad Company shall be the twenty-sixth day of June next; the place the office of the said company in the city of Fort Wayne, Allen county, Indiana; and all the proceedings for the consideration and ratification of these articles shall be as prescribed by law.

ART. 18. All elections for Directors of said consolidated company, after the first election of Directors herein provided for, shall take place at such time and place, and in such manner as may be prescribed by the by-laws of the Board of Directors of the consolidated company.

In witness whereof the corporate seals of the respective companies parties to this agreement have been affixed hereto in triplicate, on the day and year first above written, by the order and in the presence of the Directors of said several companies respectively duly convened, a quorum of each of the said several Boards of Directors being so present and assenting thereto, and is attested by their respective signatures hereto, on behalf and by order of the said several Boards of Directors; and the Presidents of each of the said companies have also, at the same time, and in behalf of the said respective companies, hereto affixed their names in virtue of resolutions of the said several Boards of Directors, passed at respective meetings thereof.

From the Louisville Journal.

### THE NECESSITY FOR A RAILROAD TO THE PACIFIC.

In this age of progress and remarkable development, no enterprise is more magnificent in design, or more beneficial in results, than the proposed railroad to the Pacific. England proposes to construct a railroad to India, and designates it the "world's highway," proclaiming that through this one great artery must be carried the trade which built the cities of the Mediterranean; the trade which half supports England, and the trade, to obtain a share of which America discusses plans almost too gigantic for the imagination. But, in the language of the accomplished Mansfield, of the *Railroad Record*, "England may indeed build her 'world's highway,' and it will be a mighty monument of her energy and enterprise—a monument more enduring, however, and beneficial than ten thousand Crimean wars. It will be, too, a work of great importance in a commercial and political point of view. But, if our people are wise enough to build at once our great Pacific Railroad, our enterprise will stand before the world in a far different light from this tremendous European project. It will pass through the domains of a score or more of petty princes, the rod of any one of whom would interrupt for a time, at least, the business of the world; while ours will stand out as one grand connected chain, spanning from ocean to ocean, and enriching the broad domain of the one nation freest and happiest on the globe—a nation whose motto is peace, but war never finds her unprepared."

The necessity for this road is apparent from three great considerations—its military, commercial, and political advantages. First, as to its *military necessity*. Our Pacific coast is accessible to the navies of Europe, and a sudden war with a maritime power would be followed by the inevitable loss of that important portion of the republic. Our present avenues to California, Oregon, and Washington are approached chiefly by sea, over an isthmus belonging to a foreign power, which thus might in its caprice arrest all attempts to transport troops and munitions of war destined to the Pacific.

The present inland route, *within our own borders*, is expensive, tedious, and exposed to interruptions from the numerous warlike tribes of Indians residing upon, or roaming, like wandering Arabs, over that uncultivated region. The cost in money, apart from the treasure which its recovery would involve, would pay for the three roads, Northern, Central, and Southern, about to be discussed in Congress. Economy, national pride, and humanity, therefore, all dictate the necessity of a railroad which will afford the certain and prompt means of concentrating a formidable military force for the protection of that distant and extended frontier; and, as was happily remarked, in the report of the Indian

Commission of 1851, "will render our possessions on the Pacific as impregnable as the late war with Great Britain proved our invincibility along the Atlantic, Mississippi, and lake coasts."

The commercial prosperity resulting from a railroad establishes it as a *necessity*. The gold, silver, copper, and quicksilver which the business of the Atlantic and Mississippi valley States requires, cannot be adequately obtained without the transportation of these precious metals being made certain and rapid. This necessity is greatly increased by the demand on this route for the conveyance of the gold from Australia, the furs from the northwest coast, the teas of China, the spices, the silks, and other light goods of Persia, of Bokhara, and other portions of the East Indies, which will find a market in Europe and America when this great channel of intercommunication shall be established across the continent.

The *political necessity* of this road is yet more imminent and vital, when we look at the recent state of affairs in California and on the Isthmus, both tending rapidly to a civil war on our own territory, and a foreign war with the nations along the Isthmus, and with the European powers to whom they may appeal for aid; in a word, the Union is not safe one moment until this vital enterprise is completed.

In the beautiful language of the *Courier*, published at New Castle, Indiana, "The people demand this road, our common safety demands it, the great interests of the community demand it. Then let our legislators cease to wrangle and debate—all to no purpose—on this subject, and take some efficient means to secure the success of this great national enterprise. Let this link, which is to bind two great communities, united in the natural bonds of the same blood, origin, and tie, be made. Let this distance between fathers, brothers, mothers, and sisters be lessened. Let the powerful lever of public opinion be set in motion; never to rest till this great end be accomplished."

### MAYSVILLE AND LEXINGTON R. R.

Some strictures were made in the last report of the Lexington and Danville R. R., on the course of the Maysville and Lexington R. R. toward the latter company, in regard to the purchase of iron belonging to the former company. One of the late directors of the Maysville and Lexington company takes exception to these, and addresses the following communication to the Maysville Eagle.—Having published the report containing the remarks alluded to, we deem it just to publish the card of Mr. January.

To the Editor of the Maysville Eagle:

I have noticed a card of Gen. COMBS, President of the Lexington and Danville Railroad Company, published a week or two since, in which, when speaking of the prospects of his Road, he charged the old Maysville & Lexington Railroad Company with being largely in arrears to the Danville Company. I have read, also, the editorial of the Lexington Observer and Reporter, reiterating the same charge, as well as your remarks in the Eagle of yesterday, in reference to the Observer & Reporter's article.

Having been a director in the Maysville & Lexington Railroad Company, from its first organization up to the time the Road was sold out in April last, I feel called upon to say,



that it was unkind in both Gen. COMBS and the editor of the Lexington Observer, to make such a charge against our Company, without giving a true statement of the case as it exists. To some extent Gen. COMBS is, perhaps, excusable, in his zeal for his Road. I take it for granted he was not fully apprised of the settlement made between the Maysville and Danville Company, on 3rd January, 1855, or he would not in his card have given the impression to the public, as he clearly did, that the Maysville Company was largely indebted to the Danville Company. The truth is, upon settlement between the two Companies, the balance due the Danville Company was \$1,795 53. It is true, the Maysville Company were unable, owing to the misfortune which unexpectedly came upon them, to furnish the Danville Company with the whole of the iron due them. After sending them from here about 152 tons, there was due them 434 tons, amounting to \$35,360 43, which we were unable to furnish in iron. But we transferred to them a balance due our Company, by the Covington and Lexington Railroad Company, of \$14,179 89 (which I hope has been paid them long since). We gave them spikes and chairs, and all the means we had at our disposal—amounting in the aggregate to \$33,750—leaving a balance due the Lexington and Danville Railroad Company upon settlement, 3rd January, 1856, of \$1,795 53. So anxious were the directors to pay this debt due the Danville Company, that notwithstanding they were personally liable for more than \$20,000, at the time of settlement, they released property that was attached by Gill, Watson & Co., of Lexington, to the amount of some \$3,500—which was turned over to the Danville Company, and which we, as individual directors, have since paid. We incurred those liabilities from time to time, hoping to save the enterprise in which we were engaged. But the pressure was too great for us. From unforeseen causes our enterprise failed.

The work, we hope, will soon be resuscitated under more favorable auspices. But we think it unkind for parties in the interior, in our present condition (considering the fact that the City of Maysville, as well as individuals, have done more and made greater sacrifices, according to ability, for internal improvements in Kentucky, during the last twenty-five years, than any other town in the State), to be continually charging us as defaulters.

Will the Lexington Observer & Reporter do us the justice to copy this article.

A. M. JANUARY,

Late Director in the M. & L. R. R. Co.  
Maysville, Ky., Sept. 25, 1856.

#### CONSOLIDATED LA CROSSE & MILWAUKIE RAILROAD.

We learn that the Milwaukie & Watertown and the La Crosse & Milwaukie Railroads have made an arrangement for the consolidation of the two companies. The Milwaukie Sentinel in noticing the fact says:

The intelligence gave universal satisfaction in our city, and must be highly acceptable to all who are interested in either enterprise. Under the terms of the arrangement the Watertown road will be merged in the La Crosse, and the consolidated companies will be known as the La Crosse & Milwaukie R. R. Company. Messrs. W. B. Hibbard, Alexander Mitchell, and Eliphalet Cramer, of the Watertown Board, go into the

La Crosse Board, and will prove valuable accessories. Mr. Hibbard, who has filled the post of President of the Watertown Company for some months past, has shown himself to be a most efficient and energetic officer, and has contributed not a little, by his efforts and influence, to the favorable result of the negotiations between the two Companies. His business energy, proverbial tact, and excellent administrative qualities will still be successfully employed in prosecuting the La Crosse Road.

The consolidation must have a very favorable effect upon the La Crosse & Milwaukee R. R. This road will connect at Portage and Columbus with the Land Grant Road, running 300 miles and upwards north westerly, and will offer to the trade and travel, to and from Minnesota and North Western Wisconsin, the shortest and best route between the Upper Mississippi and Lake Michigan. It must, therefore, from the nature of things, take the bulk of the business, and cannot fail to prove a profitable stock. And as, in addition to this North Western feeder, it enjoys a connection with the Horicon, Berlin, and Stevens' Point Road, running northerly, it would be difficult to over-estimate the amount of traffic likely to pass over its line. We see no reason to doubt that it will be one of the busiest and best paying roads in the West, and that its stock will speedily become a favorite one in Wall street.

Another advantage of the consolidation is the harmonizing of rival Railroad interests, hitherto conflicting, and the resulting union of their exertions and influence for the common good. This is a vast benefit, as well to our city and the several roads leading out of it, as to the State at large. All can now cordially co-operate in measures calculated to advance the interests of both city and state; and if, as we confidently anticipate, the Legislature shall make a wise disposition of the Land Grant, and confide the administration of this important trust to honest, experienced, and capable hands, the Railroad system of our state will be placed on a secure basis, and will be pushed forward to completion under the most favorable auspices.

#### GREENVILLE & FRENCH BROAD R. R.

The following are the resolutions, respecting this road, adopted at a general convention of the friends of internal improvement, held at Asheville, Aug. 25th:

The propriety, not to say the necessity, of connecting the Atlantic seaboard with the great Mississippi valley, by the construction of a railroad through the valley of the French Broad River, in North Carolina, is conceded by every one who has looked well to the agricultural, commercial, and mechanical interests of the numerous and large sections of country that would be connected by the construction of such a road. A scheme of the character indicated has long been thought of, and but for an unprecedented pressure in monetary affairs at one time, and an unnecessary clashing of interest at another, the contemplated road would now be in process of construction. This state of things has been much and deeply regretted; but the day has now come when the road *must* be built, and when conflicting and sectional interests must give way for the common benefit of two great sections of the country, separated by the Blue Ridge.

That the construction of such a road is eminently practicable at a moderate cost, is now beyond question. Various surveys, made by engineers of the most competent skill, attest this fact, and the reports of those surveys are now before the country.

In view of these facts, a majority of your committee beg leave to submit the following resolutions:

1. *Resolved*, That, in the view of this convention, a communication by railroad with the seaboard is necessary to the full development of the resources of this country and the energies of its citizens; and that our desires are as strong and ardent as they have ever been, to have the work done.

2. *Resolved*, That we have confidence in the integrity and zeal of the "Greenville and French Broad Railroad Company," and that we urge them by all honorable means to press forward to the completion of the work which they have begun.

Mr. Erwin, Esq., of the same committee, offered the following resolutions, as additional to those of the committee.

*Resolved*, That in the judgment of this convention the interest of the State of North Carolina, and especially the interest of the western counties of the State would be greatly promoted by an early extension of some one of the public works now in process of construction east of the Blue Ridge, in this State, to a point or points on the western borders of North Carolina, to connect with the railroads projected, or now being built in the State of Tennessee. Therefore,

*Resolved*, That the people of Western North Carolina ask for nothing more than justice, when they demand that the State be required to give her aid upon liberal terms to assist those of her citizens interested in the construction of the road extending either the Wilmington and Rutherfordton Railroad or the North Carolina Railroad west to the Paint Rock, on the French Broad River, with a branch leading through the counties of Haywood, Jackson, Macon, and Cherokee, to some point in Cherokee county, to connect with a road leading by the Duck Town Copper Mines, towards Chattanooga, in the State of Tennessee.

*Resolved*, As the sense of this convention, that it is but just to this section of the State that the charter of the Greenville and French Broad Road should be amended so as to remove the restrictions of the ninth section thereof.

#### ANDROSCOGGIN & KENNEBEC R. R.

We are indebted to a friend for a copy of the Annual Reports of this road for the current year. From these reports we learn that the finances of this company are in better condition than they were a year ago; that the floating debt of the company has been reduced; and that there has been an increase of \$18,870 66 in the earnings of the road. The President, in his report, says:

"No accident has occurred during the year whereby any person on the road has been injured; and the damage to property has been trifling, excepting the loss by fire at Danville Junction in December last, which originated in a wood-shed belonging to the Grand Trunk Company, extending to and destroying the depot, one-half of which belonged to this company, and also other buildings and property—



resulting in a loss to this company of about \$3,000.

The trains have been run with great regularity, and subject to but few delays during the severe storms of the past winter.

The receipts of the company for the year have been, from the sale of Stock Bonds..... \$47,500 00  
Earnings—Passengers..... 117,416 00  
Freight..... 94,931 12  
Other sources..... 7,127 64

209,475 46  
Total..... \$256,975 46

The expenditures for the same period have been—

For stock of the Penobscot & Kennebec Railroad, taken of Moor & Dunning, in aid of the construction of that road, as per contract of August, 1853, and which this company now holds..... 14,424 79  
Cash paid the same parties in settlement and full liquidation of said contract, as per agreement..... 12,000 00  
Interest on Bonds and Floating Debt..... 101,196 70  
For expenses of working the road during the year, after deducting the cost of materials on hand, &c..... 99,228 48

Total..... \$256,849 97

In view of the amount of service performed by the trains, and the improved condition of the road and its equipments, the Directors feel that their expenditures in the working department, including as they do all the items heretofore charged in the account of construction, have not been large or unreasonable.

For the financial condition of the company we refer you to the report of the Treasurer, which is hereto annexed.

From that report it will be seen that the floating debt of the company, although much reduced the past year, including the over-due bonds, is still large, and some provision should be made for its liquidation and payment.

To carry these debts has been, and will continue to be, a source of embarrassment to your Directors, besides increasing the expenses of operating the road in all its departments.

The stock account of the road, according to the report of the Treasurer, stands as follows :

Capital Stock..... \$588,042 64  
Stock Coupons, outstanding... 21,440 00  
Stock Bonds sold..... 498,810 00  
Stock due sundry persons..... 8,500 00 1,116,782 64  
Million Loan Bonds..... 1,000,000 00  
Interest Bonds sold..... 26,700 00  
Floating Debt..... 67,464 64 1,094,164 64

Cost of Road..... \$2,210,947 28

The liabilities and assets are as follows :

#### LIABILITIES.

Bills Payable..... \$72,018 42  
Preferred Stock Interest..... 775 00  
Original Stock Interest..... 951 48  
Overdue Bonds..... 42,200 00  
Bills audited and approved..... 17,561 53  
Unliquidated Claims..... 12,000 00  
Interest, (estimated in part)..... 2,000 00

\$147,507 23

#### ASSETS.

Cash on hand..... \$5,625 45  
Bills Receivable..... 3,660 39  
Amount due from Stations..... 9,028 27  
Due from Androscoggin R. R. Co., as per award of Mr. Lee..... 19,117 29  
Due from Pen. & Ken. Railroad Co. 1,149 12  
Due from individual accounts..... 112 62  
219 shares Pen. & Ken. R. R. Stock 21,960 01  
Wood on hand..... 13,203 93  
Stock on hand..... 8,619 47  
Million Loan Bonds..... 29,400 00

114,426 44  
Discount on Assets..... 24,382 85

Estimated cash value..... \$0,042 59

\$67,464 60

#### BEAVER EXTENSION CLEVELAND & PITTSBURG R. R.

We see it stated that this extension is now completed, and that trains are running over it. The Pittsburg Gazette says :

This road is now finished from Rochester to Elliottsville, about ten miles above Steubenville, and an excursion train was run from that point to Pittsburg on the day of the great Fremont Convention. On Monday next the trains will run regularly for Wells-ville and Cleveland. It is expected that the line will be finished to Steubenville by the first of October. This, in connection with the Steubenville and Indiana Road, will open up a new, interesting, and extensive country to the trade of Pittsburg.

#### ILLINOIS CENTRAL R. R.

One of the fullest exposes we have seen of the affairs of this road was recently contained in the New York Tribune, and was derived from an English source. It was taken from the circular of Mr. E. F. Satterthwaite, broker, of London. The Tribune says :

"It was prepared from personal investigation by Mr. Clement Satterthwaite during his recent visit to this country, and conveys the fullest information upon the subject of that road which has ever been given to the stockholders. It would make about ten columns solid of the Tribune. We have only room to-day to extract the conclusions arrived at by Mr. Satterthwaite of the future of this great enterprise from the data already afforded by the operations and results of the past year or two.

On the 1st of January, 1858, the Freeland option on 31,000 shares comes in, and the capital will stand as follows : If a \$5 call be made next year, which will, doubtless, be required to provide the needful amount of equipment, fencing, and ballasting, side tracks, etc., to do the increased business calculated on—

Capital 170,000 shares, at \$35..... \$5,950,000  
Construction Bonds..... \$17,000,000  
Freeland Bonds..... 3,000,000

Total..... \$20,000,000

Floating debt, covered by assets..... 1,500,000

21,500,000

704 miles, \$39,000 per mile..... \$27,456,000

Revenue, being increase of 40 per cent over last year \$3,500,000 or \$4,971 per mile.  
Expenses..... 2,000,000 or 2,840 per mile.  
Covering interest on \$1,500,000

By the 1st January, 1859, we anticipate that the settlement of the country will stimulate traffic so largely, that a considerable addition to equipment, side tracks, etc., will occur, and we lay the call at \$10 per share, say :

Capital 170,000 shares, at \$45..... \$7,650,000  
Construction Bonds..... \$17,000,000  
Freeland Bonds..... 3,000,000

Total..... \$20,000,000

Floating debt, covered by assets..... 1,500,000

21,500,000

704 miles, = \$41,406 per mile..... \$29,150,000  
Revenue, being an increase of about 70 per cent over last year..... \$4,500,000 or \$6,386 per mile.  
Expenses..... 2,500,000 or 3,193 per mile.

2,250,000  
Deduct interest on debt.. 1,500,000

Nearly 10 p. c. div'd on stock \$750,000

On the 1st January, 1860, the Freeland Bonds will be extinguished, and the present Floating Debt, estimating the wants of the company for capital expenditure, for equip-

ment, etc. A call of \$5 per share, the account will stand thus :

Capital 170,000 shares at \$50..... \$8,500,000  
Construction Bonds..... \$17,000,000  
Freeland Bonds..... None  
Floating Debt..... None 17,000,000

704 miles, = \$38,220 per mile..... \$25,560,000  
Revenue, being an increase of 35 per cent over last yr \$6,000,000 or \$8,522 per mile  
Expenses..... 3,000,000 or 4,261 per mile

\$3,100,000  
Interest on debt..... 1,190,000

\$1,810,000  
20 per cent on \$8,500,000.... 1,700 00

50 000 surplus.

It would be difficult and too hazardous to follow out the calculation of the effect of the redemption of the \$17,000,000 bonds ; but if our judgment be correct that 1,500,000 acres will redeem, ultimately, the entire bonded debt ; and, allowing that the growth of the traffic on the line to a receipt of \$100 per mile, necessitated the calling up of \$100 per share, the account would stand thus :

Capital 170 shares, at \$100..... \$17,000,000  
Debt..... None.

704 miles, = \$24,147 per mile..... \$17,000,000  
Revenue, \$10,000 per mile..... \$7,040,000  
on 704 miles..... \$7,040,000  
Expenses..... 3,500,000 or \$3,000 per mile

\$2,520,000  
20 per cent on \$17,000,000 3,400,000

120,000 surplus.

beside which, the holder of each share would have an interest in 1,000,000 acres of land, worth, at \$15 per acre, \$90 per share. Presuming, therefore, that these figures are anywhere near the mark, the prospects of the holders of stock are very flattering ; for they estimate that, after paying up the entire amount per share, the sales of land would redeem the debt, and 90 per cent of the stock, leaving the proprietor 20 per cent dividend on \$100 for an outlay of \$10 per share.

The following paragraph relates to a subject which is of great importance to the Texas Western Railroad company. We have never doubted that coal would be found in abundance ultimately on the line of the Texas road.

TEXAS COAL.—We have occasionally noticed the fact that we have abundance of good coal in Texas, but we have not reliable evidence to place before our readers. We are now indebted to Mr. U. Tyson, of Port Sullivan, for more satisfactory information on this important subject. Mr. Tyson has just arrived in this city, and has shown us a sample of coal from the banks of the Brazos river in Milam county, of which he says the supply is inexhaustible. This sample more resembles anthracite coal than any other kind. It is a jet black, quite hard, and presents a smooth and glassy surface, where it breaks. Mr. Tyson considers it superior to any other coal for generating steam. It burns very readily, but with less smoke than the Pittsburg or bituminous coal. The bed from which this sample was taken, is about eight miles above Port Sullivan, and extends up and down the river about half a mile on each side, the river running through the strata. Mr. Tyson is well satisfied that this coal may be brought to our coast very profitably to be used as fuel for our steamers and other purposes, whenever the Brazos river affords navigation to that point. So well convinced was he of this, that he loaded a flatboat in May last



with this coal for the purpose of commencing the trade, but the river fell before he was able to start, and has been unusually low ever since, until very recently. This bed of coal lies from five to ten feet below the surface of the earth, and the stratum of good coal is about five feet in thickness, while coal of an inferior quality extends to a greater depth. About two miles above this coal bed, the Brazos river passes over another stratum of coal very similar in quality, which constitutes the bed of the stream at that place. Specimens of coal have also been found in several other places along the upper Brazos.

We are glad to learn from Mr. T. son that he proposes locating himself in this city, and partly with a view of opening the coal trade, should he meet with any encouragement to do so.—*Texas Paper.*

#### GRAND TRUNK R. R., CANADA.

The Grand Trunk Railway line is to be opened to Toronto at an early day in October. The length of this line is 333 miles, or 12 miles less than the former estimates of its distance.

The completion of this link makes a continuous line to Iowa city, 1372 miles from Portland, as follows:

|   |            |
|---|------------|
| Portland to Montreal                        | 292 miles, |
| Montreal to Toronto                         | 333 "      |
| Toronto to Hamilton                         | 38 "       |
| Hamilton to London                          | 76 "       |
| London to Detroit                           | 111 "      |
| <hr/>                                       |            |
| Portland to Detroit on broad gauge lines    | 850 "      |
| Narrow gauge lines—                         |            |
| Detroit to Chicago                          | 284 "      |
| Chicago to Mississippi river at Rock Island | 182 "      |
| Rock Island to Iowa City                    | 58 "       |
|   | <hr/>      |
|   | 522 "      |

Total length of road from Portland to Iowa City, 1372 miles.

From Toronto west the grand trunk line is completed to St. Marys, 91 miles, which is to be extended to London, 19 miles, the coming year, making a double line between Toronto and London. From London a single line will be extended to Sarnia, operated for the use of the Great Western and Grand Trunk companies.

From Toronto north a line extends to Lake Huron at Collingwood, on the  $5\frac{1}{2}$  feet gauge, a distance of 96 miles, so that the completion of the railway to Toronto furnishes a perfect connection between the seaboard at Portland and the Far West. We hope to see at the proposed celebration at Portland, a full representation of the business men of Canada and the Western states.—*State of Maine.*

**THE COST OF AN EJECTMENT FROM RAILROAD CARS.**—A suit was recently brought against the Hudson River Railroad company, on account of one of their conductors ejecting from the cars at Riverdale, two citizens of Yonkers, named Thomas Gorgon and Hugh Donahoe while on their passage from the city to that village. The case was tried at the White Plains last week, and the complainants recovered \$100 each from the company. The complainants had purchased tickets in New York for a passage through to Yonkers, but the ticket agent being short of Yonkers tickets, said it would be all right. The conductor, however, refused to accept them for the fare to Yonkers, and on their arrival at Riverdale, ejected them from the cars.

## Miscellaneous and Mechanical.

[From the Albany Daily Statesman, Sept. 18, 1856.]

### SARCOPHAGUS OF ESMUNAZAR, KING OF SIDON.

In February, 1855, Dr. C. V. A. Van Dyck, residing in Syria, forwarded to the Albany Institute, of which he is a corresponding member a copy of an inscription. Then recently found upon a sarcophagus, near Sidon, accompanied by the following letter:

"The enclosed inscription was discovered on the lid of a sarcophagus some three weeks since, about a mile from this city. A man had employed several workmen in excavating, or rather digging, trenches through an ancient cemetery, in hope of finding concealed treasures; by this means the sarcophagus was discovered. The material is blue limestone, the upper or head part is sculptured into the form of a bust, like the Egyptian mummy cases; the features are Egyptian perfectly, and the ribs is seen on the shoulders. \* \* \* \* \*

"The French and English consuls are quarrelling about their respective rights to this relic; in the meantime it has been carefully reinterred until the matter in dispute shall be settled. The inscription being in the very oldest Phœnician character is of very ancient date. \* \* \* \* \*

"This is the only Phœnician inscription that has been found in Phœnicia, and amounts to more than all others known. Gesenius, in his work on the remains of the Phœnician language, has gathered all that has been found on coins and inscriptions, but the whole does not amount to a small part of the present one. It is therefore of great value as a relic of that nation, and the most careless observer can trace our own alphabet up to these forms. It is also identical with the ancient Hebrew and Samaritan, in which the word of God was preserved for so many ages."

The Secretary of the Institute, Mr. John E. Gavitt, had the inscription lithographed, and it was immediately sent out among the learned men of all countries, in advance of any other publication of it. Several linguists attempted to render it into Hebrew; but from the great antiquity of the inscription, and the scanty knowledge of the Phœnician, nothing clear and satisfactory was made of it.

"The Hon. Edward Everett having sent a copy to the librarian of the Institute of France, that gentleman put it into the hands of M. J. Abbe Barges, professor of Hebrew in the Sorbonne, who has published a brochure of forty quarto pages, with plates, which have been received from the author by Mr. Munsell, corresponding secretary of the Institute, and from which we gather the following particulars.

"The news of the discovery of a Phœnician inscription at Sidon, he says, had excited a great sensation in the learned world, who awaited with impatience the deciphering of the epigraph.—Being desirous to satisfy the wishes of those who had called his attention to the subject, as well as to gratify his own curiosity, he set about the task, but met with so many solecisms in the inscription, that he began seriously to doubt the authenticity of the piece submitted to him, and to fear that he should be made the dupé of some audacious forger, as he expresses it. Meanwhile, another copy of the inscription having been sent to Mr. Bunsen, of London, several learned men to whom it had been communicated, published comments upon it in various languages, but were unable to make a clear thing of it.

"At length, the case having been delivered to the French consul at Sayda, the ancient Sidon, it was conveyed to Paris; whereupon the Abbe resumed the translation, with the inscription before him, and has given in his work a version in Hebrew, Latin, and French, and a fac-simile of it in Phœnician. These are followed by an analysis and commentary of considerable length, which will afford much satisfaction to all who take an interest in such matters. Mr. Munsell has favored us with an English translation of this famous

inscription, which has puzzled the linguists of Europe and America during the last eighteen months.

### THE INSCRIPTION.

"In the month of Bul, in the fourteenth year of his reign, spake Esmunazar, king of the Sidonians, son of king Tabnith king of the Sidonians, [grand]son of king Esmunazar, king of the Sidonians, saying: Snatched from the light prematurely, and gliding away like the streams, I caused my funeral home to be built, and I repose in this sarcophagus, in this to ob, in this place which I have caused to be constructed. I forbid any royal person, and any person, to open this sepulchral bed, to search around me for treasures (for there are no treasures near me), to carry away the sarcophagus which serves for my sepulchral bed; or to remove me with this sepulchral bed upon the sepulchral bed of another. Even if men should command thee to do it, hearken not to their directions; for any royal person, and any man who shall open this sepulchral bed, or who shall carry away the sarcophagus which serves me as a sepulchral bed, or who shall otherwise remove me with this sepulchral bed, may they have no sepulchral bed with the dead; may they not be buried in a grave, nor leave after them sons nor posterity; may the holy gods and the powerful monarch who reigns over them abandon them, and exterminate the person of that king or that man who shall either open this sepulchral bed, or remove this sarcophagus, as well as the posterity of that royal person, or of that man, whosoever he may be. May they neither put forth roots downwards, nor bring forth fruits upwards, and may they be accursed by those living under the sun, because I am worthy of pity. Snatched from the light prematurely and gliding away like the streams, I have caused my funeral home to be built. For it is I Esmunazar, king of the Sidonians, son of Tabnith, king of the Sidonians, grand-son of king Esmunazar, king of the Sidonians, and my mother, Imnistoreth, priestess of Astarte, our sovereign the queen daughter of king Esmunazar, king of the Sidonians, who have built the temple of the gods [a fracture of several letters] at Sidon, maritime country, and the puissant heavens have rendered Astarte favorable to us. It is we who have built a temple in honor Esmun, as well the sanctuary Ene Dail in the mountain; and the mighty heavens have established me upon the throne. It is in short we who have erected temples to the gods of the Sidonians, at Sidon, maritime country, one temple to the honor of Baal-Sidon, and another in honor of Astarte, pride of Baal, and the Lords of kings have also delivered up to us the towns of Dor and Japhia, vast wheat-growing territories, extending the realm which I have founded; and they have added these new possessions to the frontiers of our country, securing them forever to the Sidonians. I therefore forbid any royal person, and any man, to open my tomb, and expose it, to transport me elsewhere with this sepulchral bed, or to carry away the sarcophagus which serves for my sepulchral bed, lest the holy gods abandon them, and exterminate that royal person, that man whoever he may be, and his posterity forever."

After a lapse of twenty-two centuries, the very outrage which the Sidonian king sought to provide against by these maledictions, was perpetrated by persons searching for treasures, who were ignorant of the purport of the inscription. But although his funeral bed has been disturbed and his sarcophagus carried away, it will never suffer the indignity of being placed upon that of another! but will have a lasting repose in the French Capital, among the treasured ruins of Egypt and Assyria.

The Abbe devotes several concluding pages to speculations upon the age of the monument, which he fixes at 350 s. c., and to conjectures upon the contemporaneous history of the monarch, which, though extremely interesting, are too lengthy for a newspaper article. The work will be deposited in the Institute library, where it will be accessible to any one who may have occasion to consult it.



**BARLEY WITHOUT BEARDS.**

It is even so. A variety of barley has been discovered in the gulches of the Himalayan Mountains, entirely free from those annoying and poisonous beards attached to all our common varieties.

The undersigned obtained seven grains of this new variety three years ago, and being much pleased with its general appearance and productiveness, has spared no pains to multiply this small quantity as fast as the Shanghais and other birds would allow.

Its merits for grinding or malting have not been tested, and the quantity is now too small to squander in that way, when every tiller of the soil who sees it is anxious to have a few grains; not doubting it will prove a valuable acquisition. I have sufficient, however, to furnish all persons interested, who will be likely to see this notice, with one head each, containing 30 to 60 grains. Send me your address, on a stamped envelope, and I will enclose a head, and send it back by return mail, with printed instructions for cultivating in a way to insure a large return from a small quantity of seed. Should this new variety be found to answer all the purposes of the common barley, a few years will suffice to drive the "barley beards" from the country.

Should any person desire more than the one head, I will send a package of 700 to 800 grains, securely enveloped, by mail, post-paid, for 25 cents, accompanied by a few heads, to prove the fact of its being beardless.

Address I. W. BRIGGS, West Macedon, Wayne county, N. Y.

We were a little surprised the other day at the figures shown us by Gen. Mosely, as the cost per foot of his patent roofing. This roofing is made on the same principle as his bridges—the "tubular arch"—as rafters, and covered with corrugated galvanized iron. The General positively avers that he can build depot roofs, entirely of iron, of any span or length, at less cost than the same sized roof can be constructed of wood or any other perishable material; and that he will warrant them to stand any test to which parties may desire to put them. This is something worthy the attention of every railroad directory.

DR. KANE'S Arctic Explorations, in search of Sir John Franklin.

We have been favored with a copy of this great work, by the western publishers, Messrs. APPLGATE & Co., and feel no hesitation in saying to our friends, *buy it*. The Doctor no doubt enjoyed most hugely his trip among the icebergs of the polar seas, and his talk and intercourse with the natives, but we feel free to acknowledge that we would rather read his stories than accompany him in his rambles. As to the style in which the publishers have gotten the work out, we have not one word to say—it needs to be seen to be appreciated. As a whole it is a noble monument, not only of the Doctor's talent and goodness of heart, and record of his daring deeds, but of the excellence and perfection of American arts.

## T. WRIGHTSON & CO., BOOK AND JOB PRINTERS,

No. 167 Walnut Street, next to Melodeon,

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

### TEN STEAM PRESSES,

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoz and ADAMS, and our selections of Type are sufficient to suit every taste.

### BOOKS STEREOTYPED, PRINTED AND PUBLISHED,

On as short notice, and as favorable terms, as by any house in the West. Every variety of

## MERCANTILE AND RAILROAD PRINTING.

EXECUTED NEATLY AND WITH DISPATCH.

Having recently had our extensive COMPOSING DEPARTMENT entirely destroyed by

## FIRE!!

WE HAVE REFITTED IT WITH A COMPLETE ASSORTMENT OF

## NEW TYPE,

Selected with great care from the Foundries of L. T. WELLS and L. JOHNSON, which enables us to guaranty to our Friends that whatever they may trust to us, will be executed in the best possible style of modern art. We have no hesitancy in saying that with our

## NEW AND INCREASED FACILITIES.

We are better prepared to do business in our line than almost any other house in the West.

The mechanical portion of the business is under the immediate supervision of the senior partner, who has had twenty years' experience in the most extensive establishments in the East; indeed we feel full assurance in referring to our work now scattered over the Union, as a voucher for the execution of first class printing.

## THE LIGHT OF THE AGE.

No person is insensible to the comfort, the necessity and luxury of good light, either for domestic use or consumption in Stores, Warehouses, Hotels or Factories.

## GAS! GAS!!

Is the only article now used that affords sufficient light to meet the wants of the times, and it has become the *desideratum* of the day (next to cheap bread,) to obtain cheap and good

## GAS.

This we are prepared to furnish by

## N. AUBIN'S

NEW AND IMPROVED

## GAS FURNACE.

THE IDEA OF

## MAKING GAS BY STEAM,

And applying it to the useful arts, is the work of AUBIN. It is no mere experiment, as we have had one in successful operation in our Printing Establishment for a year and a half. We have put up the

### IMPROVED FURNACE

In our establishment, and feel confident that an examining public will readily appreciate its value. We are prepared to erect these Furnaces at our risk, and warrant them to produce a superior Gas, and at a less cost, by about one half, than the COAL GAS usually furnished by the incorporated monopolies of cities.

T. WRIGHTSON & CO.,

167 Walnut Street, Cincinnati, Ohio.



# RAILROAD RECORD:

## SUPPLEMENT.

CINCINNATI, THURSDAY, OCTOBER 30, 1856.

### RAILROAD RECORD.

E. D. MANSFIELD . . . . . EDITOR.

W. WRIGHTSON, ASSOCIATE EDITOR.

CINCINNATI, -- -- THURSDAY, OCT. 30, 1856.

#### OUR LABORS AND THEIR CLOSE.

This number closes the "SUPPLEMENT" which we have heretofore issued to the *Railroad Record*. The Supplement has been issued as an auxiliary to the Pacific Railroad; and we can say, without vanity, it has been of most efficient service in that cause. A slight review of what is the present state of the case—what we have done, and what is accomplished in the past year—will enable our readers to appreciate the position of the enterprise and our own service.

When we commenced the *Railroad Record* (not the Supplement), in March, 1853, the Government had just commenced their plan of preliminary and examinalional surveys, the whole of which has not to this day been published. The *results*, however, were given to the public two years since, and we have had the benefit of them. At that time the Texas Pacific Road had sunk so low in public estimation that it was everywhere looked upon as a mere scheme of private speculation, to be hooted at by intelligent men. At the time we commenced the Supplement the *Texas Western Railroad* had revived the plan, and a new effort was made to recommend the Texas route. In that plan we coincided, and for nearly a year have published the Supplement, as an auxiliary. Let us now see what has been done in the year past.

1. The great body of intelligent men have ceased to sneer at the project, and where they do not prefer the route, have come to regard it with respect. The merits of the route are now understood, and it is clearly seen that, simply as a route, it is superior to any other. This fact cannot be got over. The preference given to other routes by many is on account of their locality and connections, and not that of merit. The shortness, cheapness, and superiority of climate of the Texas route are admitted by all intelligent persons. In fine, it is, and must be conceded now, that if the object be, as it should be, to make a real, practical, and efficient railway connection between the Mississippi River and the Atlantic Ocean, then the Texas route has decided advantages over any other.

2. The work has been actually commenced and considerable progress made, under the active and energetic management of the Messrs. BROWN, the contractors. This has

given great confidence in that part of the country, as it is seen that the company is proceeding with the work as fast as it can mature its plans and complete its financial arrangements.

3. The Texas legislation is now completed in reference to this; and it is saying little to say that it is in the *highest degree favorable to the company and the work*. In presenting the argument to the Texas Legislature, and in the most arduous and valuable service, Hon. THOMAS BUTLER KING has performed the most valuable service, and deserves the gratitude of the company and the public. If the road is built to the Pacific it will be a monument to him, worthy of his labors.

The Texas Legislation, of which we speak, consists of the following particulars:

(1.) The passage of the Loan Bill, which to this and other railroads (able to take advantage of it), secures the loan of \$6,000 per mile on the completion of the grading for each section. This is to be used for the superstructure. The Texas Pacific Road, being 780 miles in length to El Paso, this is equivalent to a grant of \$4,680,000 to the road—a very valuable *cash* advance.

(2.) In the confirmation of the land grants which had been attempted to be set aside, but which are fully confirmed. This gives certainly over *ten millions of acres* of the best land in Texas to this purpose. It is claimed by friends of the company that there is really a much greater quantity in the grant; but, assuming *ten millions* as the quantity, no reasonable power can suppose that, aided by the railroad influence, it will average less than \$3 per acre, or *thirty millions*, which alone is more than sufficient to construct the road to El Paso.

(3.) The Texas Legislature has *extended the time* in which the company are required to complete their first section. The lowness of water and the difficulty of getting materials rendered this extension necessary, and it has been made. All danger of forfeiture, therefore, from want of conformity to the conditions of the charter has been avoided.

(4.) The name of the company has been changed to one more general and appropriate.

Such is the legislation of Texas, obtained from the last Legislature; and to say that it is highly favorable to the interests of the company is saying very little. It is, in fact, so far as the construction of the road to El Paso is concerned, absolutely *decisive*. The company has means to construct the road to that point, and then 780 miles of the Texas Pacific Road may be considered a *fixed fact*.

4. Though Congress has as yet made no grant, yet matters were so matured at the last session, that it is understood that a grant of lands for that portion of the road between El Paso and the mouth of the Gila will be made. Last winter we prepared blank memorials favorable to the Pacific Road, and sent them to numerous persons, in various parts of the United States. Many of them were returned signed by hundreds and thousands of persons. They were transmitted to Congress, and in the aggregate formed a great number, producing a favorable effect on Congress. We believe that at the coming session of that body some bill will be passed containing a grant of lands, at least, for that portion between El Paso and the Gila.

A new Board of Directors has been chosen, whose talents and character promise the greatest energy and ability in the conduct of the enterprise. This great work is now actually commenced; immense grants of land and money have been made to it; public opinion is favorable; and we may confidently expect that this greatest civil work of the age will be prosecuted to a successful completion. Thus stands this enterprise at the termination of our SUPPLEMENT, and we think it has contributed not a little to this happy condition of affairs.

Our regular paper, the *Railroad Record*, will be continued as usual, and we should be pleased to add the names of the readers of the Supplement to its list of subscribers. M.

#### OUR SUPPLEMENT.

With to-day's paper we close the issue of the Supplement to our *Railroad Record*, and it is with no little pride and confidence that we look at the present high position of the Pacific Railroad enterprise, and commend it to the good sense and energy of our people. Two years ago there was a general misapprehension of this important national and commercial project. Men of sense and intelligence, of influence and position, deemed it a chimera that future ages might, perhaps, dream about, and that possibly would be realized in the course of centuries; and if they deigned to mention it, it was as the *moonshine project*, or the speculation of *reckless* men. It was at such a time, and under such circumstances, that the *Record* began the advocacy of a Pacific Railroad—a railroad that will cost, on the cheapest route, *fifty millions* of dollars, and on the more expensive ones at least *one hundred and fifty millions*; but a railroad which, when completed, will bring us *hundreds of millions* of commerce, and will annually add to our commercial balance more than its entire cost. Each year that it is delayed will



add another to that drain of precious metals that is already impoverishing us, and enriching our transatlantic competitors. The Pacific Road will bind with links of iron our eastern and our western shores, and make ours what we may proudly boast—a UNION invulnerable to foreign foes.

With such views of the imperative and pressing need of a Pacific road, the *Record* has been zealous in its advocacy of this great national enterprise. We have believed it the great want of our country, and we have unhesitatingly said so. We have spread our opinions, in detail, before the legislators and the press of our country, and we have urged them by every consideration to aid an enterprise so national and patriotic; and we have watched with intense interest the cloud of public opinion, at first like the man's hand on the distant sky, till it swelled into the mighty torrent that has compelled our three political parties to make it a strong plank in each of their platforms. And now, on the eve of a great political struggle, we commend this subject to the enterprise and public spirit of our whole people; assured that every consideration of national power and aggrandizement; every social affection that binds us to the friends of early years now living beneath the golden beams of the setting sun; every temptation that can allure private cupidity or public energy, urges with a thousand eloquent tongues the vigorous prosecution of this great work.

Europe feels it, and has planned her great East India Railway—a railway that shall penetrate the territories of a score of princes, whose imperial nod may at any instant interrupt its course—that shall cross the Straits and the Dardanelles, and seek the wild fastnesses of Asia Minor and Afghanistan. Such is her mighty project, and the conception of such a scheme does honor to the genius and enterprise of her people. But let the United States build her Pacific Railroad, and she will have provided upon her own soil, and within her own dominion, a cheaper, better, safer route than Europe ever can obtain. Let her do this, and her reward will be the commerce and the travel of the world. Her Elsinore will unopposed exact a peaceful tribute, that will be cheerfully paid, from the business, pleasure, and profit of other nations.

Let there then be no flagging in the exertions of the friends of the Pacific Road. Let no considerations interrupt its course, till it shall have spanned the broad expanse of our country, and accomplished the glorious mission that destiny has placed before it. W.

#### A WORD FROM THE PROPRIETORS, TO THE READERS OF OUR SUPPLEMENT.

You will notice by the leaders and editorial remarks in this, our closing number, that the purpose for which this supplement was pro-

jected and so successfully carried out, is deemed to be achieved. While our editorial staff so gracefully and so truthfully call attention to the services which they in this work have labored incessantly to bring to a triumphant realization—the proprietors of the *Railroad Record* feel their readers will not grudge them a small space to say something on their own account, in reference to the rise, progress, and result of this, the mightiest project that ever was conceived in the human mind—that of joining two oceans together, separated by a distance of nearly two thousand miles, through a space being part of the territory of the first nation of the earth. This project is that of the Pacific Railroad.

Our editors do well and it is most truly their right, to feel at heart, nay, from the soul, pride in the way they have spoken of the greatness of the work they have contributed to achieve. Words would fail to picture the value of these services to the future greatness of our nation. But while feeling that words could but feebly express our appreciation of their past services, we feel it a duty on our own part, and likewise a duty to all those whose foresight discovers, while in embryo, the foundations on which to build the future private and public greatness of our people and our country, to venture, on our own account, to call attention to the fact, that the results already achieved in this great project and those yet to be won, are due in great part to those who, hearing the heat and burden of the day, have firmness enough and nationality enough to have the odium and risk the loss entailed upon all proprietors of periodicals who are manly enough and zealous enough to stand the hazard of the cost. This has been done by the proprietors of the *Railroad Record*, in integrity of purpose and singleness of heart, and they are proud to say, however dark or frowning the clouds which once surrounded the Texas Western R. R., and which appeared to make it possible that this periodical might be stranded if it attempted to act as the forlorn hope, as it were, in the destruction of the fortifications which prejudice and ignorance had reared as bulwarks to stay the onward march of our great project, the mist and the darkness have cleared away. And we repeat, the proprietors are proud to say, and to feel their efforts have been appreciated; as is now manifested by the increasing demand and the progressing estimate in which the R. R. Record is now held. The proprietors conclude by thanking those brave men who stood by their efforts when all appeared so adverse, and have to assure their fellow-workers, the course pursued in the case of the Southern Pacific R. R. will ever be the path our journal will take. Truth facts, incontrovertible, will be our sole guide in future as in the past, and if we fail in our efforts we shall have the satisfaction of feeling we have struggled manfully to do our duty, to the best of our belief, in our day and generation, and if we do fail (as fail we shall not), we shall have the proud consciousness of knowing we have endeavored to leave our country better and more powerful

than we found it. Finally, we commend this road again to those who have assumed its direction, with bright prospects and a full tide of favoring public opinion, and confidently trust that the hopes of its friends will be fully realized in the successful prosecution and early completion of this great work of the age.

THE PROPRIETORS.

[From the Chicago Dem. Press, Sept. 20.]

#### RAILROAD TO THE PACIFIC.

While talking of a railroad to the Pacific we have been too apt to confine its importance and value to California—it has been customary to consider it merely as a measure to aid in the development of our Pacific possessions, and little else. This is a great mistake. If we did not own a rood of land on the slopes of the Pacific—if every settlement between this and the Rocky Mountains, and between the Rocky Mountains and San Francisco, were foreign possessions, the same demand for a railroad across that country would exist, though it might not be so readily built. What we desire is the development of the resources of this vast continent; and no matter where that development takes place, the good effects of it will be felt in the most distant portions of the land. But the country is ours; it is rich in its mineral resources, and in its agriculture it is second to no section of the known world; it has a climate mild as that of Italy, and its soil is prolific beyond measure. On the Pacific coast will yet be erected immense cities like those of New York, Boston, and Philadelphia; the Sacramento will be a second Hudson, and California will be the "Empire State" of the West; Utah "an empire of itself;" New Mexico, Kansas, and Nebraska—all the territories of the vast West will be great States, or rather immense worlds of industry. Railroad communication to these distant parts would open it right up to the East, the West, and the South, and along the iron bands would fly the genius of American progress and liberty. The oppressed and impoverished masses of European mechanics and farmers would rush in and fill up this vacuum; the cities of the East would send their young and enterprising spirits; the "poor whites" of the South would flock to a land where labor was honorable and industry an attribute of Heaven. Let but the railroad be built and it would settle forever the vexed question of free and slave boundaries, and the wheels of progress would roll back the tide of anarchy, disunion, and strife, which threatens to overwhelm us by every southern gale.

But a railroad to the Pacific is of much greater importance to our own city than many suppose. It is admitted on all hands that Chicago will, in all probability, be the great commercial center of this continent. From this point will railroads diverge to the north, to the east, to the south, and to the west; to this city will flow the commerce of Hudson's Bay and of Louisiana; of Minnesota, Canada, Ohio, Kentucky, Georgia, and Florida; and it will be the great distributing point for the manufactures and products of the whole country. Such being the case, of what importance is it for us to hurry on this railroad to the Pacific. Such an event would revolutionize the commerce of the whole world. Those immense merchantmen which ply between the Indies and Europe and America, would become but ferries to our railroad. The



whole of India, Japan, China, Persia, Arabia, Turkey, and even Siberia, would be tapped by us, and the produce of those countries, which now sail around the world to get to a market, would in all probability land here, to be distributed to New York, New Orleans, Liverpool, and London. The whole of Asia would be opened up to us. The teas, gold, silver, tin, porcelain, alum, white and red lead, brass leaf, zinc, quicksilver, and fancy wares of China; the silks, cotton, indigo, opium, coffee, bandanas, crape shawls, and silk manufactures of India; the exquisite shawls of Cashmere; the gorgeous carpets of Persia; the coffee and spices of Arabia; the raw products, sword-blades, and damask silks of Turkey; the luscious fruits of Central Asia—the mango, the date, the pomegranate, the guava, and the apricot; the wines from the plains of the Indus and the Punjab; the indigo from the valley of the Ganges; the ivory, gums, and palm-oils of the Oural; and the raw products of Hindostan, Ceylon, Burmah, Siam, Japan, Thibet, Siberia, and the Maylayan Peninsula—those immense “storehouses of Nature”—all these would flow into our warehouses and storehouses, to be sent to all parts of the world!

This is no fancy sketch. When the Pacific Railroad is built, it will be as natural for Chicago to be the chief depot for the products and manufactures of the East as it is now the commercial center of the West. Illinois will become the market for the whole world. Its broad prairies will teem with large and populous manufacturing cities, into which will flow the iron, the copper, and the lead of Superior, and the mineral wealth of the world.

#### THE METROPOLIS OF THE CENTRAL WEST.

Ever since our boyhood, when the American Empire had scarcely risen over the tops of the Alleghenies (a few small towns alone dotting the valley of the Ohio), there has appeared town after town, claiming to be the great city of the West. Each founded its claims either upon the peculiarly favorable features of its site, or upon the rapidity of its early growth. Most Western towns have grown rapidly—some of them marvelously so; yet this fact alone establishes nothing in regard to the probability that a town will attain the rank of a primary city. We scarcely meet with a magazine or a newspaper in which some writer does not demonstrate that because a town has grown very rapidly until it attained ten, twenty, or forty thousand inhabitants, that *therefore* this ratio is to continue, and this town to be a most gigantic city! This calculation was made for Rochester, for Buffalo, for Pittsburg, for Louisville; and yet each has been so arrested in this rapidity of growth as to demonstrate that they cannot be primary cities. The same sort of demonstration is now going on for Chicago, Toledo, and we suppose, in imagination, for others beyond the Mississippi. Some, or all of these anticipations may be fulfilled; but, whether so or not, the failure of such calculations in regard to anticipated growth is not owing to competition from others, but from the *want of innate vigor and strength*. A town in a new and flourishing country may have

innate strength to become a third, or a second rate city, but not a metropolis. To be the last is reserved only to places where position, resources, climate, and artificial improvements all coincide to give them extraordinary and unequalled advantages. Such is New York, such is Cincinnati, and such, probably, is St. Louis. In regard to the latter, however, there are certain drawbacks, arising from domestic institutions, and from the newness of the country, the effect of which cannot be now fully measured; but the destiny of New York is fixed, and so, we think, is that of Cincinnati. New York has now about 700,000 inhabitants, including its surroundings; Cincinnati about 200,000, estimated in the same way. One is a city of the exterior; the other of the interior. Looking to their relative positions, DE WITT CLINTON (who was here in 1825) said that New York would be the most *commercial*, and Cincinnati the most *populous* city of the continent. Time has, in a great measure, corroborated his position. Cincinnati had then but 15,000 inhabitants; thirty years have elapsed, and Cincinnati has 200,000, or about *thirteen fold*. Suppose, now, not the same ratio, but only half. Suppose it to be *six fold* in thirty years; what will Cincinnati then be? No less than 1,200,000! Thirty years will be 1886, and it is not at all improbable that such will be the result.—What are the resources of great cities? What builds them up? Business. But what sort of business? Dean Swift, we think, in one of his political essays, answers this question. He says that a really great city must arise from the joint resources of commerce, manufactures, and agriculture. Commerce alone will not make a great city. Commerce is fluctuating; commerce may be transitory; but agriculture will furnish permanent products, and manufactures permanent labor for the people. Of these three great resources, perhaps manufactures is the most certain source of population and wealth; for food can be brought from a distance, and commerce will go where there is business; but a population cannot subsist without labor; wealth is created by labor, and labor is the real support and *strength* of society.

Looking now at CINCINNATI—the Metropolis of the Central West—we find it combining *all* the requisites of a great city—agriculture, commerce, and manufactures. Indeed the world has scarcely another site so admirably adapted to become the mart and depot of all these elements. From St. Mary's summit to the Tennessee River; from the Muskingum to the Wabash—a region of wonderful agricultural and mineral resources—comprises about 100,000 square miles. Its resources belong exclusively to Cincinnati. 200 to a square mile will in a few years be its density. This gives 20,000,000 (twenty millions) of people; and then Cincinnati will probably have 1,500,000 inhabitants!

Let us turn to its commerce. Where is its limits? From the Lakes to the Gulf of Mexico—from the Alleghenies to the Rocky Mountains. Its internal commerce will far transcend the foreign commerce of any city upon earth. The trade of the Indies will be inferior to it; and the merchant princes of England will be inferior to those who will then enrich the banks of the Ohio with the accumulated wealth of gigantic labors and inexhaustible fertility! Its industry will be ceaseless in its work. From forge and hammer, from wheel and desk, from the inventions of genius and the skill of the artisan, from the sagacity of the merchant and the studies of the scholar, the Metropolis of the Ohio will draw resources for its growth, its strength, and splendor. All will unite to make it the great and beautiful center of American civilization.

#### FREIGHTS AND THE PACIFIC R. R.

Many well-informed persons believe, that the Pacific Railroad can never carry freights to any advantage to itself, or to shippers. This is a mistake. Freight carried around Cape Horn in ships is carried from *four to five months*, at a cost of *thirty to forty dollars* per ton. On the Panama Railroad it is carried at a cost of from four hundred to six hundred dollars, in about twenty-six days; and yet the Panama Railroad, with this immense disparity in charge, has as much of both passenger and freight traffic as it can accommodate. Surely then the Pacific Road, when it carries freight at *one hundred dollars* per ton from the Mississippi to the Pacific, and takes it through in *six days'* time, will find the Panama route no very formidable competitor. The supposition that freight cannot be carried to advantage on that route is both idle and futile, and can only be made by those who do not understand the *facts* of the case. If made by intelligent men, it must be either the result of want of information, or willful perversion of the knowledge they should have. So also of the passenger traffic. At the present rates, and with the present travel, the Pacific Railroad, if it depended on passenger travel alone, would be the most profitable road in the country, and with the largely increased travel to which it would give rise, at half those rates, it would still obtain nearly treble the amount per mile that is charged, or can be charged by any road now operated.

The flimsy pretext that it will not pay has no foundation in reason, and is therefore unworthy of men of sense or intelligence.

STATIONERY.—We would invite the attention of our readers, who may be in want of Books and Stationery, to the advertisement of Messrs. APPLIGATE & Co., of this city, in our advertising columns. Those who deal with them once invariably come again. Their assortment is full and varied, and embraces every article of use and ornament in their line.



## RAILROAD IRON.—TRUE POLICY OF OUR COMPANIES.

There is no subject of greater importance to our railroad companies than that of railroad iron bars for the construction of their track. And beyond all this, it enters so largely into the construction of all their machinery, that it forms the most important item, both in the original construction, and in the running and equipment of railroad trains. Railroad companies cannot then be indifferent to the great subject of *economy* in the first cost of this great staple. On this subject we have a few words to offer, more by way of suggestion for the practical consideration of plain men, than for the amusement of those who are always seeking something new. We believe that railroad companies can readily save *one half* the first cost of all the iron that enters into use on their structures, and that by a small expenditure of capital and the employment only of the native talent that is ready at hand for their use. Railroad iron sells in the market at \$60 to \$65 per ton, and frequently ranges even higher than these figures. We believe it is generally conceded that its cost at the furnace and rolling mill, all ready for the track, is not greater than \$30 to \$35—see Prof. Mather's articles in the Record of Oct. 2, 1856, and in vol. 2, pages 569, 582, 599. Omitting for the present the consideration of the effect of the new process recently introduced into England, we will consider for a moment the result if each company owned its own furnace and rolling mill and made its own iron. Let us instance the New York Central Railroad. This company owns in round numbers 500 miles of railroad. The amount of iron now used on the road is about 1000 tons per mile, making in the aggregate 50,000 tons. The annual depreciation of this iron may be set at 10 per cent. This gives an annual consumption of 5000 tons of iron. This iron purchased in the market will cost \$300,000. The cost to the company of mineral lands and machinery for the manufacture of its own iron would stand thus:

|   |           |
|---|-----------|
| Square miles mineral land containing 2560 acres at \$10 per acre..... | \$25,600  |
| One stone coal furnace.....   | 40,000    |
| One rolling mill.....   | 80,000    |
| Total cost of lands and furnaces.....                                 | \$145,600 |
| Cost of manufacturing 5000 tons of iron at \$30 per ton.....          | 150,000   |
|   | \$295,600 |

The total cost to this road, then, for all its appurtenances for manufacture, and for its iron for the first year, would nearly equal the cost of the same iron as now purchased in market; and the road would own its mills and lands, ready for use another year. The cost for the second year would be only the cost of iron, \$150,000. The account would then stand thus:

|                                      |           |
|--------------------------------------|-----------|
| 5,000 tons of iron purchased.....    | \$300,000 |
| 5,000 tons of iron manufactured..... | 150,000   |
| Annual saving.....                   | \$150,000 |

This saving would amount to a dividend of 6-10 of one per cent. on a capital of \$25,000,000. In addition to this the company would give employment to a large number of miners and me-

chanics on our own soil, whom they now actually employ in foreign countries.

We leave to practical men to say the effect this would have on the railroad interests of the land, and its further influence on the general prosperity of our country.

But more than this: Assume that the various processes now agitated for improvement in the manufacture of iron will be carried out successfully—and this requires but little exercise of faith when we remember that the Bessemer method is said to be already in operation—we shall then have a greater saving still. If left to the unaided course of trade it will yet take five years to bring these methods to be of practical service to the consumer. The ironmasters who adopt the improved methods will obtain old prices until all ironmasters adopt the same, and then competition will gradually reduce the selling rates. If railroads were in possession of the means of availing themselves of the improvements, the account for the first five years would stand thus, for the railroads of the whole country:

|  |               |
|--|---------------|
| 20,000 miles of road require annually.....                   | 200,000 tons. |
| Present cost of 200,000 tons at \$60.....                    | \$12,000,000  |
| Cost of manufacture by Bessemer process at \$20 per ton..... | 4,000,000     |
| Annual saving to the railroads.....                          | \$8,000,000   |

This sum would be sufficient to build the Pacific Railroad on the parallel of 32° in six years, allowing a small advance on the estimates of Col. Gray, of the Texas Western Railroad.

MARIETTA & CINCINNATI & HILLSBOROUGH R. R.—The receipts of the Marietta & Cincinnati Railroad for the month of September were:

|                       | 1855.       | 1856.       |
|-----------------------|-------------|-------------|
| Freights.....         | \$5,378 29  | \$17,171 44 |
| Passengers.....       | 5,921 00    | 12,625 13   |
| Mail and Express..... |             | 1,474 47    |
|                       | \$11,299 29 | \$31,471 04 |

This is a gratifying result, and goes far to verify the predictions of the Record concerning this important line of railroad.

## RAILROAD OPERATION.

We give below an interesting communication from a gentleman of much experience and observation. He suggests that the whole system of railroading be somewhat modified; that running arrangements between distant termini be entered into, so that a ton of freight, when loaded in New York, need not be handled till landed at its final destination, in Cincinnati or Chicago. We would commend the communication to the attention of Superintendents:

To the Editor of the Railroad Record:

SIR:—Being a constant reader of the *Railroad Record*, and an admirer of the ability with which the railroad interests of our country are treated in general, and more especially the statistical and most important accumulation of facts you have collated to show that the parallel of 32° is the one on which the great Pacific Railroad should be constructed, I feel anxious that you should examine and indoctrinate the railroad authorities with the wish and desire, and the best mode of establishing a consolidation or union of all exist-

ing railroad companies into one grand union, for the conveyance of through passengers, stock, and freight, without any change of carriage or transshipment from one point to another, be the distance ever so great—thus avoiding the delay, and too often loss, occasioned by frequent changes of cars and trucks.

I believe—I know it practically—that the present arrangements by which passengers and freights are transhipped at the terminus (or nearly so) of each railroad are very sad mistakes in railroad economy. I know it to be not only annoying and disagreeable to the traveling public, but injurious and detrimental to the stockholders; and not least (to those companies who wish to be served well by their employees), the system is annoying to every official, high and low, connected with the working department at every station.

Why should there be a change of cars and trucks, though they do pass from the line of one company to that of another? This is a question that, on public grounds—for it is one of public advantage or disadvantage—should be solved, and to the companies would be of easy adjustment, supposing they are governed by principles of reciprocity, and are willing to mete out to others the justice they require to be accorded to themselves. It is a plan easy of accomplishment:

First, That passengers be conveyed from any one point to another without change of cars. Secondly, Horses, cattle, and all other stock the same. Third, Freight also to be sent through without any transshipment. These are the advantages the public would achieve by such an arrangement. But I am confident the value of the property invested would also be greatly enhanced.

The book-keeping would be done at some central depot, to be arranged by the contracting companies. The companies would pay to, or be charged by the central depot for such cars or trucks, not their own property, which they might use on other lines, and also, possibly, a further sum per diem as fine or demurrage for detention, if kept beyond a prescribed term, also to be adjusted by the representatives of each company. No direct settlement would be necessary between individual companies in respect to through traffic or passengers—the accounts for which would be adjusted at the central book-keeping depot. To this establishment should be transmitted daily a return of all the passengers booked through; a return of all horses, cattle, and other stock; also, of all through parcels, light or heavy, and all the freight way-bills for through traffic; also, a correct return of all cars, trucks, wagons, &c., with the names of the companies to whom they belong, which have arrived or been dispatched, whether loaded or empty; and lastly, with all these returns must be transmitted all the through tickets collected, and even all the way-bills, should



it be necessary, by the passing from one company's road to that of another. From these returns would be collated and transmitted, after analyzation and perfect examination, duplicate and separate returns, in the central depot, to be forwarded to the individual companies in such a form that would admit, almost at a glance, of verification. These accounts, or balance-sheets, would exhibit in detail not only the total receipts, but the portion thereof to which each company would be entitled after the liabilities each had incurred by using the roads, cars, and wagons of any other had been adjusted; these balances, with each company's documents, would be then at the order of the roads to which they belonged.

In brief, by such a plan the traveling public would avoid annoyance and detention of themselves or baggage. Merchants, factors, and manufacturers would forward or receive their goods in better order and in quicker time; the companies' employees would be relieved of unnecessary duties, and the value of all railroad stock advanced at least by the sums saved, if an impetus were not given both to passenger and freight locomotion. And when we attempt to glance at the future, in connection with the mighty railroad projects in operation and contemplation—when the Atlantic and the Pacific, the North and the South, the East and the West, will be united by roads of iron in bonds of love—this subject is most important to be understood by the people, and most worthy of your powerful advocacy.

#### A HARD WORKED CLERK.

October 17th, 1856.

#### MOBILE & OHIO R. R.

We have refrained from speaking of the progress of this road for want of suitable definite information. We have now, however, the last report of the company, and give its condition up to February 21st, 1856. The report is one of great interest, and shows conclusively the inconvenience of attempting great projects with a scarcity of means. This company has the same land grant that was acceded to the Illinois Central—*six sections* to the mile. This, although a magnificent domain, is quite too small alone to furnish all the means for the construction of a railroad. From the report we learn that

"The total amount invested in the construction of the road to December 31st, 1855, as far as reported at the Mobile office, to be \$4,536,412

And this amount has been derived—  
From payments on capital stock, including,  
City Tax Bonds of 1856 and  
1857 ..... \$2,568,555  
" Revenue of the road in operation, nett. .... 164,936  
" Income bonds, state loan and sundries, payable ..... 1,802,921  
\$4,536,412

The amount of indebtedness outstanding December 31st, 1854, together with payments made thereon in 1855; also, new debts created in the year 1855, are as follows:

Amount indebtedness to Dec. 31st, 1854, as per last annual report ..... \$1,937,606.15  
Of which has been paid, in 1855 ..... 467,003.58  
Leaving unpaid Dec. 31st, 1855 ..... \$1,470,602.57  
New liabilities created during the year, unpaid ..... 602,268.45

Total debt, Dec. 31st, 1855 ..... \$2,072,871.02  
Being an increase of indebtedness over the previous year, of ..... 135,264.87  
And, after deducting city taxes of 1855 and 1856, pledged for the redemption of the tax bonds of 1856 and 1857, leaving a balance of ..... \$1,644,931.02

Of this amount, 400,000 dollars due to the State of Alabama, has been extended for two years by a recent act of the Legislature, and will be payable in March 1858. The remainder, \$1,244,931.02 will mature in all the present year—the greater portion before 1st June next—and upon the next Board will devolve the duty of making provision for its further extension or liquidation.

This statement does not include the income bond issue payable July 1st, 1861, nor \$20,000 six per cent. mortgage bonds payable 1883, which have been disposed of, but embraces all other obligations of the company, excepting a purchase of rails now coming forward, and which will appear in the accounts of 1856.

This purchase is part of a contract made by the President in London in the spring of 1855, for 20,000 tons rails to be delivered in 1856, of which 16,000 tons are payable in Tennessee bonds at par, and 4000 tons in the company's obligations at 12 months with interest. A portion of this contract has been delivered and will become payable early in 1857.

If track laying is to be continued, after the present stock of iron out of bond is exhausted, it will require for duties and custom house charges, the sum of \$75,000. Will also be required for freights, insurance, etc., on cargoes, in port and to arrive, \$40,000, which must be provided for during the next three months.

In the programme put forth by the company in March last, in reference to raising means by an issue of income bonds, the amount required to pay floating indebtedness and build the road to Columbus was stated at \$1,090,000.

It was proposed to obtain the sum from—

1st, An issue of income bonds ..... \$1,000,000  
2d, The nett earnings of road in operation to Macon (198 miles) estimated as ..... 150,000  
Making a total of ..... 1,150,000

And leaving a surplus of \$60,000 for contingencies. The amount actually realized from these sources to 1st January, 1856 (to which are added installments due after 1st January, and amounts not yet collected), is as follows:

#### Income bonds—

From installments paid to 1st January, 1856 ..... \$397,025  
From loans Mobile banks ..... 120,000  
From installments due and collected, Jan. 1856.. 40,000  
Uncollected city and country sub's. estimated... 42,975

Total from bonds ..... \$600,000  
From nett earnings of road in operation to Marion (139½ miles) ..... 85,000

\$685,000  
Leaving a deficiency of means of ..... 405,000

The President of the company made temporary provision for this deficiency, by procuring a loan in New York, on a deposit of income bonds of \$100,000. And by opening a credit with a banking house in New York for \$150,000, of which has thus far been drawn against the sum of \$125,000, leaving a balance of \$180,000 still required to carry out the programme as originally stated.

The report of the Chief Engineer furnishes in detail the progress of construction upon the several divisions of the line to the 1st February inst., which may be summed up as follows:

|   |       |
|---|-------|
|   | Miles |
| Total length of road from Mobile to Columbus, Ky    | 473   |
| Of which laid and in use February 1, '56.....       | 153   |
| Of which laid and not yet opened, Feb. 20, '56..... | 9½    |
| Of which graded and ready for track.....            | 262½  |
| Of which in progress not ready.....                 | 47¾   |

From Columbus, Ky., to Cairo, 24½ miles not yet graded. Of Paducah Branch, 59 miles in length, 7 miles of track are laid, 20 miles more are ready for track, and 32 miles in progress of graduation.

Comparing these figures with the last annual report, the total amount of progress made, for the year 1855, is

56¾ miles of track laid and added to road in use.

64 miles more completed ready for track on the main line and Columbus, Mississippi, and Kentucky branches; and on the Paducah Branch, 4 miles laid and 4 miles graded ready for track, during the year.

Upwards of one million dollars of solvent local subscriptions are yet due and uncollected in the states of Mississippi and Tennessee, all of which will be required as rapidly as they can be made available, to defray the expenses of local work in those states—for which they will be fully adequate.

Referring to the statement of indebtedness already given in this report, of which is matured and will be due this year ..... \$1,244,931.02  
Add expenditures for station house and track indispensable to safe operation of road.... 110,000.00  
And for freights, &c., on iron arriving at Mobile, payable in cash..... 40,000.00

Total ..... \$1,594,931.02

We have in round numbers the sum of 1,400,000 dollars, which will be needed, most of it within the next six months, to relieve the company from obligations already incurred, provided expenditures be at once stopped and the work of construction in Mississippi entirely suspended.

Should track laying be continued, however, \$150,000 additional will be needed to take rails out of bond and lay them in track to Columbus.

To meet this large indebtedness, the resources of the company are:

1st, The entire issue of first mortgage bonds, \$6,000,000  
Less to protect an issue of \$1,000,000 income bonds ..... 1,000,000  
\$5,000,000

2d, Income bonds undisposed of ..... 400,000  
And 3d, the donated lands of the company 1,150,000 acres.

The completed portion of the road has been running for some time with the following results:



Oregon is, to all intents and purposes, a mountain country. There is scarcely a hill or open spot of ground from the Rocky Mountains to the Pacific Ocean, or from the Columbia River to the California line, which does not afford a view of mountain scenery more or less grand. As the traveler approaches our Territory from the east, the first sight of any portion of Oregon is Fremont's Peak, an immense mass of rocks, snow, and ice, in the

By far the greater portion of Willamette valley is prairie, with heavy bodies of timber on the water-courses. The mountains are also heavily timbered. Within the valley are a number of high hills and ridges, some of them connected with neighboring mountains, while others are completely isolated. These are, in some places, covered with groves of timber, and in other places with grass. The soil is of good quality to their summits, and farms and houses are frequently seen perched on them, more than 1,000 feet above the country below. One of these hills, or Buffon's Mountain, as it is called, stands nearly in the center of the valley, and is fifteen miles in length from north to south, and from 1,000 to 1,200 feet high. Its summit is destitute of trees, except a few scattering oaks, and here and there a tall fir. One of these last stands near the highest point, and being 200 feet high, and without branches for some fifty feet from the ground, and straight as an arrow, presents a singular and prominent object. From the top of Buffon's Mountain the view of the surrounding country is of the grandest description. Away to the north three tall, snowy peaks are seen, the farthest not less than 125 miles distant. These are in Washington Territory. On the south side of the Columbia is the Hood. It rises from the summit of the Cascade range, among the dark evergreen forests, to the height of 18,750 feet above the sea, and about 300 feet above the line of perpetual snow. In August, 1853, two men, Messrs. Dyer and Lake, ascended to the top. Several others made the attempt at the same time, but failed to reach the summit. Among these was an Indian, who went almost to the top, but coming to a place where a stream of hot air issued from a crevice in the rocks, he became *quash* (afraid), and refused to go any farther. They found hot air



issuing from many places, giving evidence of great internal heat. The view from the summit was very extensive; but, on account of the extreme cold, was not enjoyed to the extent that could have been desired. To the south of this peak is Mt. Jefferson, and still farther south, near the upper end of the valley, are the Three Sisters, connected by a high, snowy ridge. The Calapooa Mountains at the head of the valley, are also in sight, and the Coast Mountains, from the same point to the Columbia River, embracing a circuit of not less than 350 miles. Besides this, our beautiful valley lies like an immense map spread out more than a thousand feet below, with its wide prairies and dark forests, and towns, villages, farms, and farm houses, bright, sparkling sheets of water among dark evergreen forests, and bright yellow fields of grain among the green prairies. All these, taken together, all in sight from one spot, make one of the grandest, most extensive, and most beautiful sights it has ever been my lot to behold. But I must close; so farewell.

Yours, H.

#### REPORT OF THE COMMITTEE ON NATIVE DISTILLED LIQUORS AND WINES.

To HON. R. J. BARRETT, *President Agricultural and Mechanical Association.*

SPECIAL PREMIUMS OFFERED BY MESSRS. T. M. TAYLOR & CO.

**STILL CATAWBA.**—The contestants for the premium cup offered for the *best Still Catawba* were as follows:

|  |              |
|--|--------------|
| William Haas (2 vintages), Booneville, Mo. |              |
| John H. Boller,                            | " "          |
| Philip Walther,                            | St. Louis, " |
| Mo. Wine Co.,                              | " "          |
| M. Werk (3 vintages), Cincinnati, Ohio.    |              |
| Jno. D. Park (per Nicholson), "            | " "          |
| N. Longworth,                              | " "          |
| Carr & Smith, Alton, Illinois.             |              |
| Dr. Beatty (per Elder).                    |              |

Previous to testing the wine all labels and marks were removed, and the ownership of each bottle designated by letters, arbitrarily selected, pasted thereon, and as many wine-glasses as there were samples, with corresponding marks, placed before each gentleman. As soon as the committee had unanimously decided which, in their opinion, were the best wines, the key (explanatory of the letters) was opened, and the following was the result:

*First*, M. Werk, vintage 1855.  
*Second*, " " 1854.  
*Third*, Mo. Wine Co.  
*Fourth (ex aequo)* Haas, Longworth, Boller, Beatty, and Walther.

The *Premium Cup* was therefore awarded to M. Werk, of Cincinnati.

The two first mentioned wines are remarkable for their bouquet, flavor, and good body.

The committee take pleasure in stating that the greatest portion of the wines above mentioned were of excellent quality, and indicated skillful manufacture and careful management.

**Committee.**—Alexander Kayser, L. C. Hirschberg, Samuel Treat, John How, Wm. Wade, Taylor Blow, Alex. Peterson, Geo. I. Barnett.

#### SPARKLING WINES.

The committee on *Native Sparkling Wines* consisted of the following gentlemen: E. M. Ryland, J. B. Brant, Thos. B. Graham,

N. D. Strong, W. Perpignan, Walter B. Foster, John McNeil, J. V. Huntington.

This committee made two adjudications.

**1. SPARKLING CATAWBA.**—Samples were placed before the committee of the following wines:

Bogen, Werk, Longworth, Mo. Wine Co., Zimmerman, Parks.

The samples were designated by letters and marks. The contest was lively among the judges. One sample was ruled out unanimously; a second was put aside by a majority of seven, being the *first choice* of the eighth. This was G. Two others were unanimously sent out of the ring, though pronounced to be very fine wines. Two remained, and, after some discussion, a wine was selected by a strong majority vote, which proved to be Werk's. On the second choice there was some further discussion and careful retasting. To the surprise of everybody G came up again, and being strongly supported by Mr. Graham, competed for the second award, which was finally granted to it by a decided majority, and it turned out to be Bogen's. So, then, the awards were:

*Premium Goblet*, M. Werk.

Second in quality, Bogen.

Honorable mention, Longworth and Mo. Wine Co.

**2. SPARKLING ISABELLA.**—Two samples only were placed before the committee, and they were unable to agree on the superiority, four being in favor of one and four of the other, and both sides, after some discussion, adhering to their previous opinion. The question was finally decided by calling in the assistance of Taylor Blow, Esq., from the *Still* committee, as an additional judge, who awarded the superiority to the wine which was found to be Longworth's. The committee, therefore, make the following award:

*1st*. Sparkling Isabella—N. Longworth.

*2d*. " " M. Werk.

E. M. RYLAND, Chairman.

J. V. HUNTINGTON, Sec'y.

#### NATIVE DISTILLED LIQUORS.

The committee on *Distilled Liquors* make the following awards:

**BEST OLD BOURBON WHISKY**—*Premium Silver Cup*, Hunter & Bruce, Lexington, Kentucky.

*Honorable Mention*, Monks & Ghio, Saint Louis.

**BEST NEW BOURBON WHISKY**—*Premium Silver Cup*, Hunter & Bruce, Lexington, Kentucky.

**BEST RYE WHISKY**—*Medal*, to J. B. Wilgus & Co., Lexington, Kentucky.

The committee take pleasure in stating that the samples of Old Bourbon Whisky were the best they had ever seen, and it was thought so many samples, so good in quality, had never been brought together before.

The samples of Mr. H. C. Hart, St. Louis, and J. Monks, Louisville, were particularly noted.

**Committee.**—S. B. Wiggins, William Lindsay, John McNeil, Thomas Jackson, J. E. Darst, Robert Walton, John Sexton, R. E. Smith, W. Seay.

The committee on *Peach and Apple Brandy*, consisting of the following gentlemen—M. C. Jackson, William Lindsay, Dan. G. Taylor, Thomas Graham, T. Polk, R. R. Walton, W. Perpignan, unanimously award as follows:

**BEST PEACH BRANDY**—*Silver Medal*, to L. Dorsheimer.

**BEST APPLE BRANDY**—*Silver Medal* to L. Dorsheimer; and also makes special mention of a sample of Brandy made by Don Ambrosio in New Mexico, exhibited by Hon. Wm. Carr Lane.

**NOTE.**—All the committees, in making their awards, followed the plan pursued by the judges of still wines, in removing labels, &c. as above mentioned.

The gentlemen present then resolved themselves into a general committee, and, on motion, Gov. Polk submitted the following resolutions, which were unanimously adopted:

*Resolved*, 1. That we express our thanks and acknowledgments to the Board of Directors of the *St. Louis Agricultural and Mechanical Association*, for their energy and enterprise in getting up and carrying through the splendid Fair now brought to a successful termination.

2d. That the Hon. J. R. Barrett, President of the Association, upon whom has devolved the arduous task of directing this, the first successful enterprise of this nature in our city, has displayed a zeal and industry that merit public approbation.

3d. That Messrs. T. M. Taylor & Co. merit our particular thanks and encomiums for their liberality and enterprise, in offering their handsome premiums through the Association, in addition to the general premiums of the Fair.

TRUSTEN POLK, Chairman.

J. V. HUNTINGTON, Sec'y.

Oct. 17, 1856.

#### NORTH CAROLINA COAL.

It is not as generally known as it should be, that there is an increasing demand for coal, which can not be supplied from the coal-fields now open and in operation, except by the construction of new and very expensive works. The supply now reaches five millions of tons per annum. It is estimated that in 1861, additional millions will be required. Now, where is this supply to come from? The Cumberland region in Maryland and Virginia, is the only one now furnishing coal from which any additional quantity can be had at once. It is estimated that the utmost capacity of the Chesapeake and Ohio Canal is three millions of tons, and of the Baltimore and Ohio Railroad, one million more. These would increase the supply to about eight millions of tons—not the half of what will be required.

Having thus a data collected, we were recently much interested in examining the able report of the State Geologist of North Carolina, to find that on the Deep river, one of the branches of the Cape Fear, there is an extensive coal basin of the finest bituminous coal. The slackwater navigation, which has been in progress for some time, is about to be finished, so that in three or four months this superior coal will be in our market. Recent experiments have been made in our city to test this coal for gas, and as we had occasion to notice a few days since, they resulted in establishing the fact that it yields more pure gas, by nearly twenty per cent., than any coal ever tested in this city. We place the several analysis before the public, in a tabular form below, by which the above result will be fully shown.

Such being the established superiority of this coal, the next question, in an economic view, is, "at what cost can we get it to our market?" Upon inquiry, we are highly gratified to find that it will not cost more than \$4 per ton, and as the English coals are now brought to New York at \$9 75 per ton, it would seem that the North Carolina coal, of really superior quality, must soon defy all competition, either in this or the New York market.



We learn from the geological report, before referred to, that the coal region of Deep river is also rich in the finest iron ore, and particularly in that ore called the "Black Band," so celebrated for the production of the Scotch pig iron. In addition to these great elements of wealth, there is on the river, some distance below, an inexhaustible supply of marl, which yields 60 per cent. of lime; and thus the necessary flux for the iron is within the reach of those capitalists who are now about to erect iron works on the river.

There are also, as we see by the report, the finest white oak and pine forests on the banks of the river, and which forests extend back for miles. The region is moreover famed for the production of all the cereals common to the South.

May 2d, 1855.—Tested 5 pounds of Pictou coal, from City Gas Works, at request of F. H. Odiorne, which gave 16 cubic feet of gas, with an inferior coke—time, 1 hour and 15 minutes. At the same time 5 pounds of Cannel coal gave 20 feet of gas of good illuminating power—coke deficient in quantity but of good quality.

May 29th, 1856.—Five pounds of Mid Lothian coal gave 18 feet of gas, of tolerable illuminating power—coke moderate, time 1 hour and 20 minutes.

June 5th, 1855.—Five pounds of Clover-Hill coal gave 16 feet of gas, with a tolerable coke.

June 15th, 1855.—Five pounds of Alleghany coal gave 18 feet of gas, fair illumination, and a large amount of coke of inferior quality.

June 25th, 1855.—Five pounds of Pittsburg coal gave 19 2-10 feet of gas of good quality—coke good in quantity and quality.

August 3d, 1855.—Five pounds of Linyan coal gave 20 feet of gas—coke fair in quality and quantity. E. LANING, Sup't.

*Northern Liberties Gas Works.*

NORTHERN LIBERTY GAS WORKS, }  
September 5, 1856. }

Tested 5 pounds of coal taken from hogheads received from City Gas Works, which gave 24 cubic feet of gas of good illuminating power. The coal is from Chatham county (Deep river), North Carolina. E. LANING, Sup't.

RACINE & MISSISSIPPI R. R.—The Racine & Mississippi Railroad has recently been opened to Beloit. The opening was an occasion of great rejoicing to the friends of the road, and the people along the line.

## SOUTHERN PACIFIC,

OR,

Texas Western Railroad Company

AGENCY.

*The undersigned, Agent for the*

**Texas Western  
RAILROAD COMPANY,**

Will furnish for a short time only,

the full paid 5 per cent. stock of said Company on the usual terms of two and half dollars on each share of \$100, and balance as instalments mature, in 5 semi-annual payments, 50 cents on each share. The project is fully under way, and has been sufficiently advertised for every one to understand. To parties wishing to subscribe, I can furnish them full explanations.

EDGAR CONKLING.

Aug. 21. Odd Fellows' Hall 3rd and Walnut.

# RAILROAD RECORD.

AND

Journal of Commerce, Banking, Manufactures, and Statistics.

PUBLISHERS' CIRCULAR.

## RAILROAD RECORD.

E. D. MANSFIELD.....EDITOR.  
W. WRIGHTSON, )  
T. WRIGHTSON, ) .....ASSOCIATE EDITORS.

The title at the head of this paper expresses its plan and purpose. The VALLEY OF THE MISSISSIPPI is at this time engaged in works of gigantic magnitude, involving immense interests. Its Commerce has increased at a rate heretofore unknown in history. Its Navigation embraces thousands of vessels of various kinds. Its financial engagements extend over the globe; and its cities are rising to a population and wealth, commensurate with such a country and such a Commerce. The object of the RECORD is to promulgate authentic Statistics and reliable information of the RAILROADS, BANKS, MANUFACTURES, and COMMERCE of this great Valley, and thus, of course, aid the interests of that great body of the public engaged in them.

In pursuance of this object, the RECORD has furnished, and will continue to furnish, in still larger proportion, a great amount of STATISTICAL INFORMATION on the Commerce, Agricultural, and Mineral Resources of the West. No other Journal has embraced so much information on these subjects; and we now add that it is our intention, in successive numbers during the year, to exhibit the entire Development of the Agriculture, Mineralogy and Geology of the West, so far as they furnish materials for commerce. We have already furnished views of the Vine and Indian Corn; and we intend to bring out successively similar articles on Wheat, Barley, Oats, Potatoes, Hops, Sugar Cane, Cotton, and Lumber. We shall accompany these with brief but complete views of the Coal, Iron, Lead, Copper, and Gypsum Regions of the West; the demand for the productions, and the effects of these developments on the Railroad System. This, when done, will furnish information which cannot be found in any one work.

The STOCK TABLES in the RECORD are made up from the actual sales in Cincinnati.

New York, Philadelphia, and Baltimore, and are corrected from the latest information received up to Wednesday noon. The STOCK SALES are from the reported public sales in Cincinnati and New York.

The circulation of the RECORD has already extended to every State in the Union, and is becoming more and more extensive. Finding its way as it does into the hands of Railroad Directors, Engineers, Superintendents, and others interested in Railroads, Banking, and Commerce, the Railroad Record as an

### ADVERTISING MEDIUM,

offers superior facilities for bringing to the notice of the proper parties everything that has any connection with Railroads, Banking or Commerce.

New Inventions, also, unknown to many yet very useful, may be thus brought to the notice of those who would be most likely to adopt them. In no portion of the Union is the progress of improvement in Railroads Machinery, etc., more rapid than throughout the West and South, and at no point is information upon all subjects connected with Railroad progress more eagerly sought for than in Cincinnati. The publishers do not hesitate to say that the circulation of the RECORD is very extensive throughout these sections, and presents a certain means of bringing all inventions, improvements, etc., in machinery directly before those interested in their use.

### TERMS:

Subscriptions to the RECORD, \$3 per annum, *in advance.*

|                                   |        |
|-----------------------------------|--------|
| One Square, single insertion..... | \$1 00 |
| "    per month.....               | 3 00   |
| "    per annum.....               | 20 00  |
| One column, single insertion..... | 4 00   |
| "    per month.....               | 10 00  |
| "    per annum.....               | 80 00  |
| One page, single insertion.....   | 10 00  |
| "    per month.....               | 25 00  |
| "    per annum.....               | 200 00 |

Cards not exceeding 4 lines, \$5 per annum.

All subscriptions and communications should be addressed to

WRIGHTSON & CO.,  
Publisher and Proprietor  
167 Walnut St., Cincinnati.

**T. WRIGHTSON & CO.,**

**BOOK AND JOB PRINTERS,**

*No. 167 Walnut Street, next to Melodeon,*

CINCINNATI, OHIO.

We are prepared to execute all kinds of PRINTING, having every facility which the present advanced state of the art affords, and we are determined to keep up with the times. We have

**TEN STEAM PRESSES,**

Of the latest and best manufacture, with all the modern improvements, from the factories of Hoe and Adams, and our selections of Type are sufficient to suit every taste.

**BOOKS STEREOTYPED, PRINTED AND PUBLISHED,**

On as short notice, and as favorable terms, as by any house in the West. Every variety of





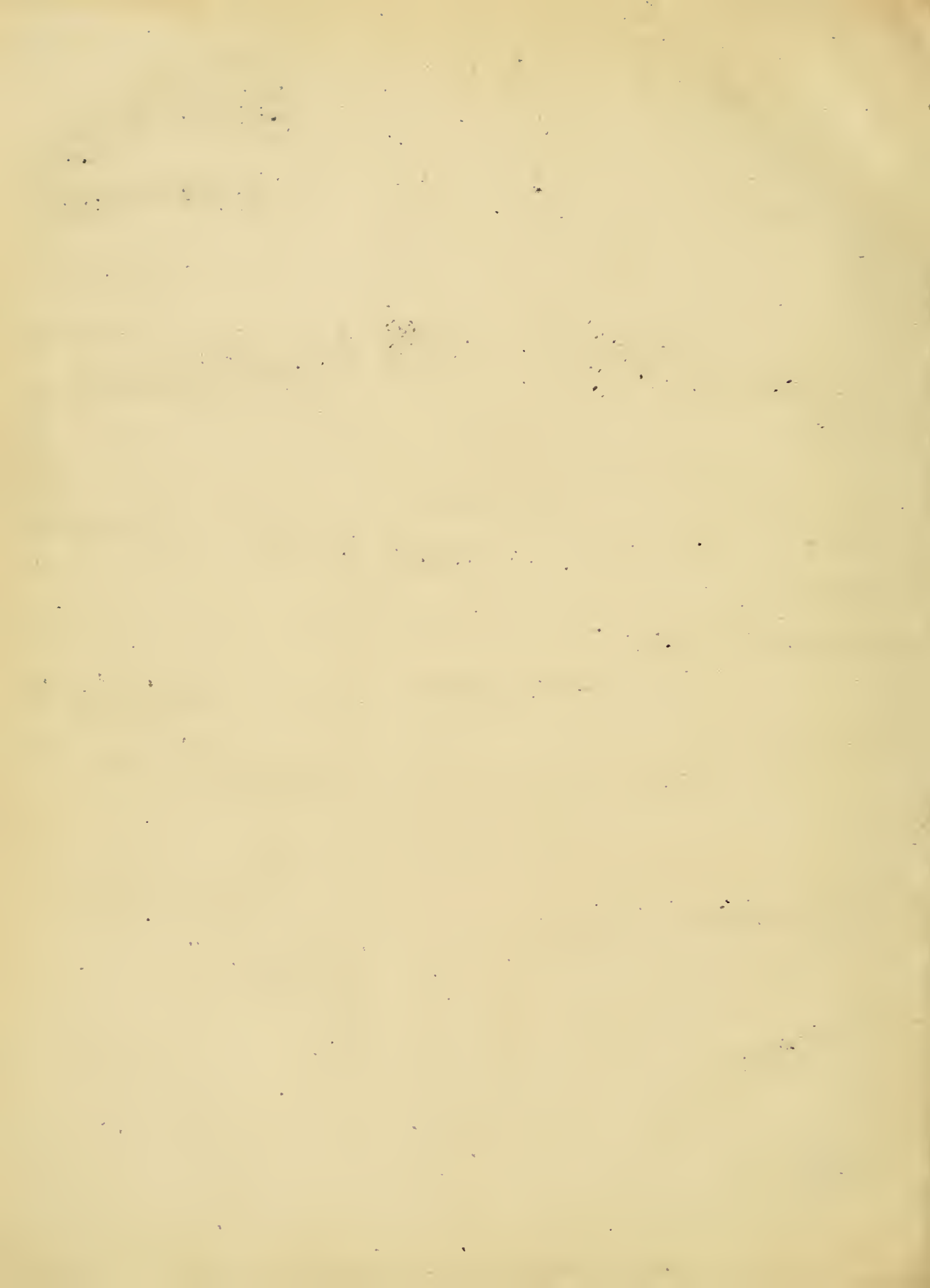










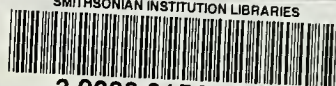




INTERSTATE  
COMMERCE COMMISSION  
LIBRARY  
DEC 16 1899



SMITHSONIAN INSTITUTION LIBRARIES



3 9088 01549 3166